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Teachers College RECORD

Volume XXV, Number 3 May, 1924

Edited by JAMES E. RUSSELL

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TEACHERS COLLEGE RECORD

VOL. XXV, NO. 3 MAY, 1924

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TEACHERS COLLEGE RECORD

VOL. XXV MAY, 1924 NO. 3

AN ANNOUNCEMENT

Beginning with the September number, the TEACHERS COLLEGE RECORD *will be published ten times instead of five times a year. It will appear monthly except July and August. Volume XXV will end with the present number.*

THE RECORD *will thus be able to reflect more fully than has been possible hitherto in the fewer numbers at its disposal the views on educational theory and practice advocated and followed by Teachers College and its schools, and can report more promptly on College news and Alumni activities.*

The subscription price will be increased to $2.50 a year. Subscriptions now in force, which do not expire later than May, 1925, will include under the new arrangement each number issued until the date of expiration. Until June 1 subscriptions expiring with this number may be renewed for one year at the old rate of $1.50.

THE QUALIFICATIONS AND PREPARATION OF DEANS OF WOMEN *

By SARAH M. STURTEVANT
Associate Professor of Education, Teachers College

"O, wad some pow'r the giftie gie us
To see oursels as ithers see us!"

is an oft-repeated prayer; but if any one has ever been so boldly arrogant as to test its sincerity by attempting to answer its petition, I am sure that she has found her punishment almost greater than she could bear. The punishment of Jove is relentless should any one assume the prerogative of omniscience, and the devastating blow of broken human fellowships follows with quick justice. No one with any small experience in life would so risk her happiness. Nor shall I.

It is, however, exceedingly difficult to speak on the subject of the qualifications and preparation of deans of women before a group of such deans without seeming to be discussing the qualifications and training of those deans themselves. But since the topic is, through

* An address before the Teacher-Training Section of National Association of Deans of Women, February 27, 1924.

your chairman, one of your own choosing, I shall take it for granted that we are all prepared to enter into this discussion most impersonally.

There is no doubt but that some people just *are* deans. With reference to a certain most successful dean, Dr. MacCracken of Vassar College said in effect, "Her inability to resist a girl who needed her even at the expense of her own convenience, meant that she was bound to be a dean, whether ever elected or not." Quite so. To use an old saw, some may be said "to be born deans," as some are born teachers or born mothers. There was great teaching in the world before there was a science or art of teaching. Such teachers as Jesus, Socrates, Abelard, Alice Freeman Palmer, or Mary Lyon, drew throngs of eager students without ever having studied methods in a teachers college. The famous mother of the Gracchi has long been a symbol of great motherhood, though she probably never heard of a balanced diet. But most of us would not feel that great natural genius on the part of the few would lessen the argument for the advisability of training for the rest of us who must *achieve* skill as teachers, nor would we deny the value of knowing the milk formula even to the born mother. So with us as deans. Some of us, perhaps all of us here, are born deans; at least for our comfort and convenience let us so consider it. But the multiplicity of acquired interests forced upon us by a merciless and insistent demand for efficiency has made life artificial so that intuitive recognitions are inadequate to meet the situation. This means a growing necessity for social guidance, and it may mean that successful work as dean ought to be definitely prepared for by some, lest the task should be thrust upon them who have not the good fortune to have natural genius in that direction. Indeed it is true that at present the demand for properly qualified deans and for folk to do allied work outstrips the supply.

Along with all our self-congratulation and the unqualified appreciation of the useful work done by some deans, we cannot, however, close our ears to the criticism of us which is so rife. If we are interested in our own improvement as a group, we must listen to the sound of dissatisfaction. Such criticism comes from many sources: first, from the girls whom we are to help. Well I remember the eager little reporter, a two years' graduate of college, who came to interview me about deans in general. She grew interested in the subject and, quite forgetting herself and the fact that I was a dean, said, "Do you think we could get a different kind of person for dean, one to whom you would like to go? Could she be younger so she could understand us?" Then there was

the other girl, a fine, socially minded senior, of the sort interested in the Y.W.C.A., an understanding person, who, apparently without provocation, burst into the office of a professor in a large university and spoke impulsively and with great feeling on the subject of deans. One rather picturesque remark was repeated to me: "Deans must know the taste of black coffee as well as pink tea."

Nor is it only the girls who are criticising us; the outside world also takes its jibe. Two or three times in reference to my particular work of helping in the preparation of deans, someone has said to me, "Well, can't you make them a little more human?" And one woman supplemented that remark by saying that she would like to know that once at least they had felt the joy of life. With all due respect to her peculiar slant on what constitutes the "joy of life," her remark was nevertheless significant. Very important also are the comments of the principal or president who comes in search of "just the right woman." His remarks are often, by emphasis and by innuendo, an evaluation of the work of the previous dean not altogether flattering. Taken altogether, this criticism is so sharp and so general that many fine women feel that they cannot face it. One charming woman who had been asked to be the dean in one of the leading colleges in this country told me that she couldn't face the prospect of such universal unpopularity.

On the other hand, one hears of this or that dean whom the girls "adore," the community respects, and the president appreciates, the product of whose work is finer womanhood. An itinerant worker representing a large student organization told me that within a few hours after her arrival on the campus, she had the dean's measure on the girls' scale at least, and that it varied vastly in different colleges.

These considerations are important only as they give point to the question of the day—what *are* the qualifications and what should be the preparation of a good dean? Admitting that such opinions are erroneous and of little value, do they, after all, give some clue to what are necessary qualifications and what is desirable training? Is there so great a gulf fixed between us and the girls that they find no hope of crossing it? Are we wooden, academic, and devoid of ability to play? A discussion of these questions will involve, first, an analysis of the dean's task, if such an analysis be possible; second, an answer to the question, what qualifications does the job as defined demand? third, to what extent can special preparation meet these requirements?

If we turn to the first question, we must ask ourselves, Is there any inclusive conception of the function of a dean which might indicate

what is needed in the person who serves in that capacity? In spite of the different form which the office takes in every institution, is the work a special kind of work requiring special personal equipment, or can persons eminently successful in other fields be profitably promoted to it? Is it possible that some of the unfavorable comment which deans are getting is due to the fact that folk have accepted such reward for other distinguished service without knowledge of the technique involved, quite as though a man's success in banking should be deemed ample reason for his being a great painter? Are there some fields of endeavor which might directly prepare for such a position? Is it possible that specific training has not seemed necessary because the specific character of the job is only just emerging?

I doubt not but that we should all agree that it is the unrest of the times, the social stress of a changed situation resulting indirectly from the invention of power driven machinery, and more directly from the consequent change in the position of women in relation to education, industry, and the family, that has given rise to the position of dean. It is the effort of society to discover a way to steady and direct the youth who suffer most from the gales of conflicting opinion in a changing time. Some think that the office is a temporary measure which may help to weather the tempest of accumulated unrest, but which, like the life boat, will be no longer necessary when the storm is over. To me it does not seem so. Whatever the original idea of the office was, the dean's task has grown bigger than the adjustment of women to a coeducational college, or indeed to any college, high school, or normal school. It means the social guidance necessary to the coming of a new social order in which the sorrows and sins of the world will be less because of greater knowledge of the laws of successful social adjustment and the more sure development of better social attitudes. We have explored the physical world, learned its laws, released its forces to our use, extended our voices thousands of miles, given wings to our feet. We shall go on augmenting our powers by further addition and utilization of physical forces. We are coming to understand the principles governing mental life. We shall go on investigating. The difficult task before us is the study and interpretation of the laws that govern social relationships. It is the task of social engineering. Society has at least caught a vision of the possibility of discovering and employing the laws that underly the developing of personality to the making of a deeper and truer democracy. Once it has set out upon that quest of discovery, there will be no turn backward until the clear path has been

found to the fountain of a more universal happiness. The school has set its face in that direction and the dean is one of the agents who is to help blaze the way. Her task is not merely a salamagundi of pick-up jobs, of managing details of parties, of serving on committees, of chaperoning dances; deans are not primarily patterns of social decorum, assistant clerks to principals and presidents, nor yet confidential agents of high school and colleges to speak to girls on subjects taboo to men. If she has such duties, they do not express the meaning of her work, nor are they central to it. It is rather a service of constructive knowledge and technique, a new kind of specialized skill which has for its aim the effecting of better adjustments between individuals and the world in which they must live. In her recent book *What is Social Case Work?* which is so singularly apropos of the work of the adviser of girls and women, Miss Richmond has framed a definition that I take the liberty of adapting to our use: "The field of the dean is the development of personality through conscious and comprehensive adjustment of social relationships and within that field the dean is no more occupied with the characteristics of the individual than of the environment, is no more able to neglect one than the other." In college the problems may not all arise out of economic want, but out of economic riches, which may produce the same social mal-adjustments, neglect at home, lack of harmony, family skeletons, mental complexes, ignorance; indeed, out of any one of a thousand other unhappinesses, "shipwrecking storms may break." There is the same difference here as in social work between temporary relief measures and permanent building, the same difference as in medicine between symptomatic and radical treatment of disease. To quote Miss Richmond again, "It is easy to be pleased with the results of social service (or of deaning) when we measure them just after the first changes for the better, or from one angle, but when we dare to examine them from the standpoint of life as a whole, with the permanent welfare of the individual and of society in mind, we are applying a much severer test of values." With such a test it is clear that the development of independent personality is the only adequate solution.

It may be well to stop here to define more adequately that vague and much abused term *personality*. Some one has defined it as ability to coöperate, to bring about a coalition of wills. Bliss Perry says, "The revelation of personality unites men as mere individuality separates them." It is that changing, growing composite of inner tendencies acted upon by outer influences and agencies which MacIver in his

Elements of Social Science calls the "final value, the only thing in the world worth having in itself" and which finds its highest expression in "love for all mankind," in "the energy of steadfast good will seeking to create fellowship" both with the human and the divine.

What does this mean? It means that the dean is to meet girls in situations where the ***only method*** of solution is fellowship. She meets girls in subtle, everyday situations where no one can find the answer in any book, when habitually she must make use of social contacts as a means of growth. There is Mary, whose mental limitations are unrecognized at home, whose attitude toward teachers is one of sullen resistance; or Helen, who comes with a tale of a malignant note found which proves to be of her own writing; or Jane, who wants to know the joy of friendship and service on school committees. How shall one make the adjustment of the individual to other individuals so as to bring about a more healthy mental attitude and greater social usefulness? It is not sufficient simply to talk to Mary or to Helen or to Jane. Some change in environment must be made that will tend toward permanent growth in personality. What changes? That is the question.

Or there is the group whose youthful social proclivities have defeated scholarship. How to help to set standards which shall give the greater freedom which the young people want and yet be conducive to the safety, unification, and harmony of the group, is another question. Or perhaps there is a non-social group who need to feel the pulse of social enterprise if they are to develop that ability and disposition to fellowship which marks great personality. How to pry them out of selfishness to altruism is still another question. Someone has suggested that if preachers continue to squabble on questions of theological dogma, the philosophy of youth will be more in the keeping of the deans than of the ministry, if deans realize that youth does respond to environment and that their job is the adjustment of environment to the development of winsome character.

If this is the primary function of the dean, there will be other duties entailed in the successful accomplishment of it. Administrative relation with the government of the institution must be accorded her as fundamentally concerned with environmental conditions that must be determined by the administrative council. Questions of curriculum, housing facilities, distribution of funds, are of vital interest to her. The carrying out of plans brings her into similar relation with the

student group, as represented by student government associations and house committees.

Further than that, so new is the office of dean, so misunderstood as to the real significance and dignity of her function, that to maintain respect of students, faculty, and community she must often needs demonstrate her intellectual capacity and fitness for faculty rank by teaching an academic subject, so much more respect have we at present for erudition than for ability to reveal to a person his own greater capacity for fellowship. I take it, however, that administrative and academic duties are *means* only to the great end of the development of personality by the "conscious and comprehensive adjustment" of environment to personal and group needs.

The analysis just made suggests in itself the preparation and qualification of the dean. If she is to have academic responsibilities, she must be adequately prepared to carry them with credit to herself as a teacher whose scholarship in her field is in accord with the standard of scholarship which the institution maintains. Her administrative relations with the faculty on the one hand and with the students on the other call for organizing ability, for the capacity to see problems in the large, with a view to developing fundamental policies of procedure, as well as for sensitiveness to details of management. The shaping of policies designed to free the human spirit of its shackles of fear, hatred, ignorance, and selfishness demands the widest possible knowledge of psychology, sociology, biology, philosophy of education, and religion. There is need for all the facts available concerning suitable housing, concerning mental and physical health, personal and social hygiene, and vocational opportunity.

But more important than these formal aspects of the dean is the spirit and skill which uses the tools of power and influence. There is a technique which implies not only knowledge but skill through practice. How do people learn? How do they acquire social attitudes? What experiences bring about desired results in character and socially useful ideals of brotherhood?

In a recent questionnaire asking the high school principals of California who had deans concerning the qualifications which they deemed important, such qualities as sympathy and understanding, tact, fine womanhood, attractive personality held chief place. These are qualities born of the ability to achieve wide, vital, personal, and vicarious experience. She who would deal constructively with persons must know how to suffer, to aspire, to love with them. She must learn tact, have

eternal youth, the power of social diagnosis, and that constructive imagination which makes technique worth while.

In summary, the dean must be a leader in the best sense of the word, possessed of the intellectual gifts of originality, good judgment, and insight; motivated by clearly defined purposes, large enough to take in the *whole* of life, and real enough to demand her tenacious loyalty, and last but not least, inspired by that sympathy, humility, and love which characterize the greatest leadership.

The final question is: To what extent can specific training meet these requirements? I am sure the answer has been suggested in the discussion. It is possible by study to get some knowledge that will help in the main task. It is possible to arrive at some principles of procedure based upon scientific data which will save time over the old trial and error method. It is possible to have at hand the tools of service, to know the sources of material, to be in touch with experts.

In view of these facts I should like to submit the following suggestions for discussion.

First, that more men and women of natural social aptitudes should be getting the knowledge and right preparatory experience for the social guidance of youth.

Second, that teacher training institutions and departments of education in colleges and universities may well set up courses in the theory and management of extra-curricular phases of all grades of school work with a view to the better discovery of natural abilities in social leadership.

Third, that professional preparation is advisable for those who expect to go into dean's work inasmuch as there is a body of definitely useful knowledge available, and a technique of procedure in process of evolution.

Fourth, that in view of the character of the work such specific professional training should be open to women of experience and given recognition only in connection with higher degrees.

Fifth, that it seems time that principals, presidents, and the deans themselves recognize the professional status of people trained in the technique of dealing with human relations.

As valuable as special studies might be in such professional training, far more important is the preparation through a particular kind of experience. In discussing the value of specific preparation for social case work, some one says, "Skill in making better and better adjustments between the individual and his environment seems to many of us

to come by nature as reading and writing seemed to Dogberry. The error in the theory is the failure to recognize how much is being done to develop a native gift through training by specialized experience." It is said that old Asa Tenny, whose neighborly sympathy made it his pleasure to try to introduce Laura Bridgman to the world about her, quite resented the intrusion of Dr. Howe, who added to affection and kindness the equipment of knowledge and experience which gave "new power to the older power of just loving one another." "Acquirement of skill in social diagnosis takes time." The ability scientifically to discover facts is futile without the constructive imagination which makes the discovery of those facts worth while. Interpretation of data in terms of personality is the crux of good social work whether it be in school, college, or settlement. Mind acting on mind, insight that is deep and clear, ability to see possibilities of adjustment, realization of the importance of environment, and the possibility of controlling elements in that environment—these are qualifications of maximum value. It is clear then that some experience *is* valuable in preparing for dean's work. One principal went so far as to say that he would never have a dean who did not have children of her own. Most would question his judgment in making so hard and fast a requirement. However, it is equally clear that some lines of effort would have little to contribute. It is doubtful if organizing ability or scholastic distinction or honorable teaching service or social prestige are in themselves qualifications for dean's work. All contribute to the more formal aspects of it, but are not vital to it. To quote again, "In the service of personality—of a personality other than our own—there is a field of endeavor whether we call it teaching, social work, dean's work, or by some other title, that is of all fields the most exacting. We are 'named and known' by such service; by and through it we take our 'station and degree.'" It is the ability and disposition to be all things to all people, and though the dean have all knowledge, and the gift of tongues, and all degrees, and have not this gift of spiritual leadership, it profiteth her nothing.

SOME POSSIBLE USES OF STENOGRAPHIC REPORTS OF LESSONS

By M. B. HILLEGAS
Professor of Education, Teachers College
AND MARY R. LEWIS
Teacher of Third Grade, Horace Mann School

Educational literature is remarkably barren of faithful reports of lessons actually taught under normal conditions. In the field of elementary education there are countless books and articles dealing with principles and methods of teaching. There is also a large amount of literature dealing with the testing of the results of instruction. But definite descriptions of ways in which principles and methods have been employed and results achieved are few in number.

Those whose interests relate to the improvement of instruction have long been conscious of a need for reports of actual class work. It is a common experience that mere descriptions of principles and methods are not sufficient to enable teachers and others to incorporate them into practice. It may even be doubted whether the majority of teachers and supervisors are able to identify principles and methods when they occur in the class room. The Horace Mann School is often visited by those who have been led to believe that the school is conducted according to some particular method. The school has no intention of following such method, yet a surprisingly large number of such visitors leave with the conviction that they have seen the desired method exemplified. Every person who seeks to improve practice in the schools has cause to fear well-meaning friends who place wrong interpretations upon definitions and descriptions, so that while they claim to use the new practices, they are really using those that may be antagonistic to the ideals of the reformer.

Demonstration lessons are designed to clarify conceptions of principles and teaching methods. When such lessons are conducted under proper leadership, they may achieve desirable results. Without such leadership, however, they are likely to be of little importance. Some months ago the writer worked for a week with a group of earnest

supervisors who desired to gain greater facility in judging teaching and in suggesting improvements. Among these was one who at first confined his attention to the proper adjustment of the seats, another whose specialty was the recognition and condemnation of "yes and no" questions. A third member of the group always reported and criticised the teacher's failure to require complete answers. It must be admitted that each of these items may be important, but while these supervisors had attention fixed upon these matters the lesson was progressing, and they failed to catch the more significant features of the work.

Accurate reports of lessons are of positive value to teachers and to those who are training to become teachers. Such reports can never take the place of demonstration lessons taught in the presence of learners, but they may be used to advantage for some purposes that are not served by observing class work. In courses for supervisors it is customary to call upon students to describe the lesson under consideration. It requires training before students even in a graduate class can give a satisfactory description of what took place. In the earlier stages of the student's development a reported lesson will be helpful. Teachers can by means of such reports obtain a much wider acquaintance with class room procedure than can possibly come from the limited amount of visiting that is possible.

Demonstration teaching before a group of observers is always a difficult task. Both teachers and pupils are self-conscious to such an extent that effective work is impossible. It is usually unsatisfactory to attempt to teach children outside of their own class rooms, yet few rooms are so arranged as to accommodate the number of observers that are now found in college classes and on the staff of the larger school systems. In Teachers College, particularly in the summer session, adequate provisions for observing demonstration lessons are difficult to provide. The size of the college class is usually such as to force some into positions where the children cannot be heard. These conditions make it desirable to supplement observations with printed stenographic reports of lessons.

In many school systems demonstration lessons are taught before groups of teachers. This practice deserves to be encouraged, but all of the difficulties that have been mentioned regarding demonstration teaching are found in this situation, and there is added the necessity of protecting the sensibilities of the one whose work is under consideration. Teachers who observe such lessons are likely to feel a need for knowing what has previously been taught and what will follow. A

report of a series of lessons which would cover an entire unit of work would be of great help to the teachers. These could be discussed without fear of hurting the feelings of the one who taught the lesson, and the problems involved in instruction could be studied in a way that is not possible when a lesson is observed.

Teachers College is collecting stenographic reports of lessons. Those who have endeavored to obtain faithful reports of lessons in the elementary school have met with many discouragements. The person who undertakes such reporting must have some knowledge of teaching as well as a superior skill in stenography. One who possesses these qualifications has been employed and a considerable number of lessons are now ready for the printer. There will be no effort to edit these so as to remove defects. An attempt is made to include such descriptions as will help the reader to gain a clear understanding of what took place. Whenever possible work in schools other than those connected with Teachers College will be reported.

It is probable that each lesson will be printed as a unit, after which the different lessons will be combined so as to meet different requirements. Various instructors in Teachers College have expressed a desire to secure a selection of lessons that embody the principles which they wish to emphasize with their classes. Such groupings will be made. It is expected that there will be available for the methods classes in the summer school a number of lessons sufficient to supplement the observation of teaching. For those who may desire to use these reports for teachers' meetings or for special study groupings by grades or by subjects will be made. At present several units of work under the control of members of the Teachers College staff are under way. Among these are included: The teaching of social science, the meetings of the civic league of the Horace Mann School, and the reporting of lessons observed by the classes in supervision with the discussion of these lessons by the class and the instructor.

The following lesson was taught by Miss Mary R. Lewis, teacher of a third grade in the Horace Mann School and assistant in Elementary Education in Teachers College. It happens to be the first lesson that was reported. It is presented here with the belief that it may be helpful to those who wish to examine it with care. It was not feasible to include the writing of each of the children but a representative sampling is included.

There is also included the minutes of the executive board of the General Association of the Horace Mann High School for Girls.

The purpose of the General Association of the Horace Mann Junior and Senior High School for Girls, as expressed in its Constitution, is "to further the interests of all recognized social and athletic activities in the Horace Mann School, and to coöperate in promoting the general welfare of the schools." The executive committee of this Association is composed of the duly elected officers of the Association, the presidents of the six classes, the athletic managers, and the presidents of branch organizations, such as the Girls' League.

The executive committee meets in the class room of Mr. Hatch, the faculty adviser of the Association, once a week at a regularly assigned period, and has authority to make and to suggest to the faculty rules and regulations for the welfare of the school.

WRITING

THIRD GRADE FEBRUARY 11, 1924

MISS LEWIS. On Friday I told you that we might have special help on those letters which you wanted to write. To-day we said that we would practice writing valentine poems for Mother's valentine, so we will have to let those letters go for a while. Unless that valentine is sent soon I am afraid that Mother won't receive it in time. You know Miss V [in charge of supplies] promised to send us some cards; before that time I think it is well that we practice the stanzas. By doing this, we will be sure to make no mistakes, for I am sure Miss V will send us only one card each.

This morning Peggy read me a lovely poem that she made up. Will you read it, Peggy?

PEGGY (reads). "I send to you this valentine,
To you, this love of mine."

MISS LEWIS. Here is one that a little boy wrote last year; he made it up himself too. . . .

Children interrupt with following remarks: Who was the little boy? . . . I know who he was. He was in the second grade. . . . No, third. . . . It was Freddie Martin, wasn't it, Miss Lewis?

MISS LEWIS. No, it was Billy Warren. (Begins reading):

"Postman, postman, hurry here,
I've a note for Mother dear.
She is waiting—that I know—
Just to read, "I love you so."

Which do you like better?

PUPILS (in unison). Yours. . . . Yours . . . Because it has the word "mother."

MISS LEWIS. Well, that's hardly fair to Peggy because this poem is more nearly just for Mother. How many would rather have Billy's poem? (Majority raise their hands.) Now, Peggy, would you be willing to lend your poem to those who wish to copy both of them?

PUPIL. Where'd she get that card? (Peggy has her poem on a red heart with paper lace backing.)

PEGGY. At the book store.

PUPIL. Will we have cards like that?

MISS LEWIS. No—our cards won't be that shape. We will talk about the way we will put our verses on when we get the cards.

This morning I am going to write on the blackboard in my very best writing this poem of Billy's for you to copy.

(Begins first line of poem on board.) My chalk won't make as good writing as your pen will.

(Writes second line.) This word "I've" is one of those words we talked about the other day—written with an apostrophe because it means two words in one.

(Pupils speak out: Stands for "I have.")

PUPIL (referring to third line). What do you want those straight lines in there for? What do you call them?

MISS LEWIS. Don't you remember in Alice In Wonderland how we found so many of those straight lines, and we said they weren't absolutely necessary. For instance, you are talking to yourself: "She is waiting—that I know." It's a part that may be left out without losing the sense of it—just as we found those parts in Alice In Wonderland might be left out—parts enclosed in those marks, and still making sense.

(Writes last line.) This is something new—quotation marks. This is the part that the little note says, "I love you so." After a while when you begin writing stories you will use these marks to show that somebody is talking, but you need not bother much about that now. . . . These marks are always used in stories or poems or in any kind of reading material to show when people talk.

(Gives out pieces of practice paper for writing.) Are there any questions? Remember your tall strokes and your spaces.

(Child interrupts and criticises her writing on the board.)

MISS LEWIS. We cannot do manuscript writing with chalk as well as

we can with a pen. The chalk will not make a good firm stroke. Now, are we ready?

PUPIL. Shall we name it?

MISS LEWIS. No, this is just practice paper. We won't have to put a name on it . . . just your name at the bottom of the page.

PUPIL. I have a name for mine.

MISS LEWIS. You might name it if you care to. Sometimes on valentines the poems are named and sometimes they are not. Use your own judgment. Be careful that your pen is not turned on the side. The point must be flat on the paper. If you want help, raise your hand, and I will come to you in particular. . . .

Now, begin copying. (Walks among the desks observing pupils' work.)

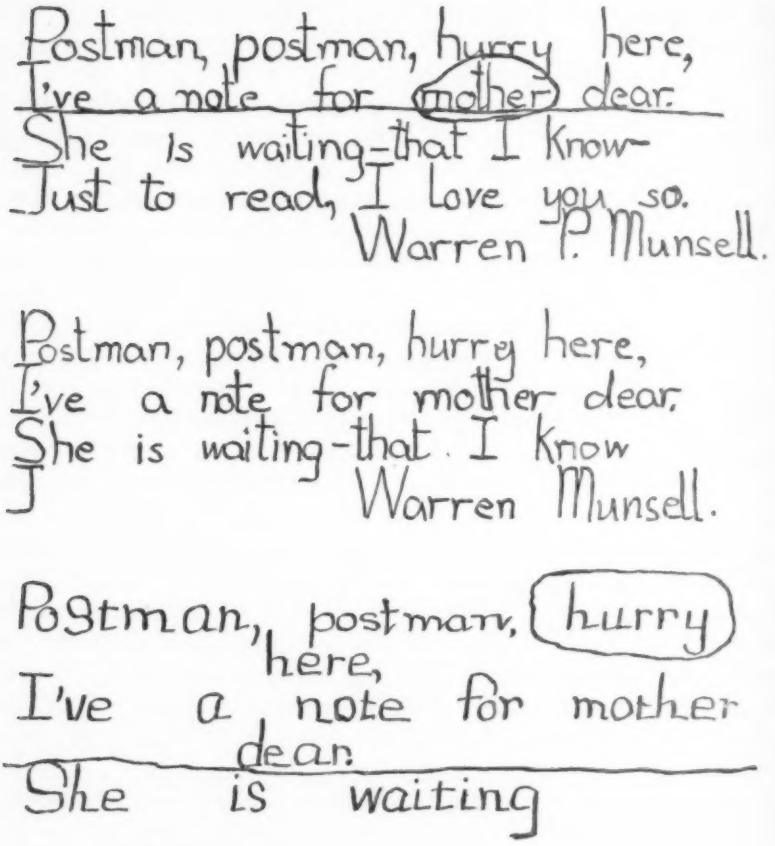
Here's a boy who doesn't have a comfortable position. . . . Let me help you. May I do the first line for you? . . . I like that "o." It's a nice round one. . . . (To class). I don't think it is necessary to work for speed this morning since this is practice work. Let's make quality count. . . . You see how "stingy" your letters are. . . . Let me write a few words for you. . . . Try not to erase. . . . (To class) The letters of your words must stay very close together and we must have spaces between the words. . . . That's very good . . . I like the way that poem looks. . . . Make your half spaces *really* half spaces. Mary, can you criticise that yourself?

MARY. The letters are all the same size. (Refers to short and tall letters.)

MISS LEWIS. Yes, the spaces are not proper. (Continues with inspection of pupils' work.) . . . Bob, what's the matter with this?

BOB. I don't know.

MISS LEWIS. Why, it seems as if it's very wobbly. Perhaps you are trying to hurry. You know there are two things to work for in writing —speed and quality, and quality is primary . . . quality ought to come first in writing. . . . You are doing the same thing Mary was doing. Your spacing is not good—the "o," "m" and "n" should be the same height. Let me write a few words for you. . . . Now, see if I make my "s" just as tall as the "t." (Observing work of pupil whom she had previously corrected.) That's better. . . . You didn't cross your "t." . . . Chester, I like your position. It's comfortable. Your last line is not as good as the first. Really the last line should be better, don't you think? (Inspecting work of another pupil whom she had corrected.) Your second is much better, James—very much better.



SPECIMENS OF CHILDREN'S WRITING

Pencils down. . . . How many wrote the valentine poem more than once?

(Majority raise their hands.)

MISS LEWIS. How many wrote it more than twice?

(Two raise hands.)

MISS LEWIS. That's good. . . .

Will you put a line—a very light line in pencil—under the one line that you think is your very best writing? Look over each line, think about the spacing, the size of the letters, the way the

letters are formed before you draw your line. Look at it carefully because *you* are judging this.

Now, look over your poem for the best word in it, and when you come to the word you consider your very best writing to-day, put a little circle around it . . . the very best word that you have—one that has good, firm strokes.

Now, will you put your name at the bottom? Perhaps your name will be the very best piece of writing on the paper.

PUPIL. My name is the best writing I've done.

MISS LEWIS. Then put a light circle around your name. . . . Do you think you will be better able to write your poem on your good card? Don't you think you will make a better job of the gift to Mother because you have practiced? Whenever I want to write a special message to somebody I like to practice first to be sure that I will make a nice piece of work. Valentine Day comes but once a year—it seems to me that Mother deserves the very best piece of work we can give her on that day.

(While pupils are putting their names on their work, Professor Moore, visiting supervisor, observes work of pupil near her.)

MISS MOORE. Your name is written splendidly. I like the way he makes an "M." I have an "M" in my name too, and I'd like to make mine the way you do.

PUPIL. Miss Lewis, I think my name is my best writing, too.

MISS LEWIS. Then if you feel your name is the best, put a circle around it.

Would you like to give your work to Miss Moore and these visitors?

PUPILS (in unison). Yes.

MISS LEWIS. Will the first of each row take the work of his row and give it to Miss Moore?

A REGULAR MEETING OF THE EXECUTIVE COMMITTEE OF THE GENERAL ASSOCIATION OF THE HORACE MANN HIGH SCHOOL FOR GIRLS

CHAIRMAN (HARRIET PARSONS). The meeting of the Executive Committee of the General Association is now called to order. Will the Secretary please read the minutes of the previous meeting?

SECRETARY (MISS WOOLF). "A meeting of the General Association executive committee was called to order at 11:58 on February 27, Miss Parsons presiding. The minutes were accepted as read.

"The first business before the house was to consider the budget. A motion was made, seconded, and carried, that the chair appoint a committee to consider the amount of the G. A. dues, and apportion the same. The following suggestions were made to this committee:

"That the dues be raised to $10.00.

That a regular sum be given to the Paint Pot.

That more money be given to the Girls' League, Mannikin, Record, Dramatics.

"Miss Parsons brought up the matter of having a Court of Justice in the school to make decisions concerning matters which would otherwise be brought to the G. A. President, who has no stated power to consider them. This Court would consist of the G. A. President, the head of the study halls, and the Senior high school class presidents. No conclusive action was taken.

"The meeting was adjourned at 12:20."

CHAIRMAN. Are there any additions or corrections? I believe, Miss Woolf, you neglected to say that this Court of Justice would deal with continued infraction of rules. Will you make that correction, please? . . . The first business before the meeting is the budget. Will the chairman of the Committee on the Budget please make a report?

MISS OLIPHANT. Madame Chairman, in the past year we have paid $7.50 as G. A. dues. The funds have been apportioned as I have shown on the board. I think it has been felt all through the school that the dues need to be raised, and there are two possible changes that I think might be made. I have put the two plans on the board that the Committee would like to suggest, one raising the dues to $8.50 and the other raising them to $10.00. We though that $10.00 was rather a large step so that we made one in between—the $8.50. The only difference in the $8.50 plan was that 50 cents was given to the Record and 50 cents to the Mannikin while in the $10.00 plan the classes were changed from 40 cents to 60 cents, dramatics from 35 cents to 55 cents, the Record from $2.00 to $3.00, the Mannikin from $2.00 to $3.00, Athletics stayed the same, the G. L. the same, the G. A. the same, and the Paint Pot had 10 cents. They had never had anything before, and we thought because there were approxi-

mately three hundred students in the school that would give them almost $30.00, and we thought that would be enough.

CHAIRMAN. Does some one wish to move that we adopt either of these plans?

MISS BEEMAN. Madame Chairman, I move that we adopt the $10.00 plan.

CHAIRMAN. Is this motion seconded?

MISS MAYS. I second the motion.

CHAIRMAN. Is there any discussion on this plan?

MISS SCHULTZE. Madame Chairman, it seems to me that it might be a good plan before we do anything definite to bring this up before the Parents Association because after all the parents are the ones who will pay this additional amount, and so I think it would be wiser to find out just what they think of it.

MISS ALEXANDER. Don't you think if the Parents Association were consulted that they would naturally say that they didn't see the necessity for this increased amount? They don't really have a knowledge of how we use the dues exactly nor how much we really need.

MISS OLIPHANT. Madame Chairman, I think the step of raising the dues from $7.50 to $10.00 would be such a big one that the whole matter should be brought before the entire school, and I suggest that we present both plans to the school and explain the matter to them. Although the Executive Board has the power to limit and apportion the dues as it sees fit, I think that the school should be allowed to determine this.

MISS WOOLF. Madame Chairman, last year it was suggested to the school that the dues be changed to $10.00 and at the mere suggestion—why, they all gasped at the thought of it and were simply astounded, and I think just from that you can tell that the school was genuinely opposed to it.

CHAIRMAN. In connection with that, Miss Woolf, I would give several reasons for even considering it. Under the old plan the Mannikin only receives $2.00. That means around $500.00 per year. Now the Mannikin costs $1200.00, and even were we to give the Mannikin $4.00, which is twice as much as it now receives, that would just barely pay for it.

There has also been the question of collections in the various classes, which is against the rules of the school. Classes do not seem to be

receiving enough money, and they are constantly trying to solve this problem by taking up collections. Therefore, all together, there seems to be a necessity for an immediate change introduced.

MISS ALEXANDER. Madame Chairman, it seems to me that although the school seemed to be adverse to the suggestion of increasing the dues, since they also object to the infrequency with which the Record appears, which is due to the lack of funds, it would be advisable to make the change notwithstanding.

CHAIRMAN. Then the suggestion is that we pass a motion to have the matter brought up before the entire school and have them vote on one of the plans? Is there any discussion on this $10.00 plan?

MISS WOOLF. Madame Chairman, if we consider this $10.00 plan in order to give the Mannikin an extra dollar it seems unfair, because why should the senior year book play a more important part in the school activities than anything else—for instance, the G. L. or charitable organizations?

MISS OLIPHANT. Madame Chairman, I don't agree with Miss Woolf because if you will look closely at the $8.50 plan you will see the only things that are changed are the Mannikin and Record, while in the $10.00 plan we are able to give more money to everything, that is, everything that needs it, and also give some to the Paint Pot, which has never received anything before.

CHAIRMAN. Is there any further discussion on the $10.00 plan? If not, will all those in favor of accepting this plan please signify by saying aye? Contrary-minded nay? Does some one wish to move that we place this plan before the school to be voted upon?

MISS ALEXANDER. I move that this plan be submitted to the school to be voted upon.

CHAIRMAN. Is this motion seconded?

MISS MAYS. I second it.

CHAIRMAN. Is there any discussion?

MISS WOOLF. Madame Chairman, I cannot see that there is any necessity of bringing this up before the school. It is not possible for everybody. . . . When people are not very interested in the G. A. and don't know the intricacies of how much money is required they might not realize the necessity of this increased amount while those who are more interested have more time to consider the matter.

CHAIRMAN. It is our place, of course, to keep the school interested in the intricacies of the General Association.

MISS ALEXANDER. It seems to me it would be very necessary to submit the plan to the school because they are the ones who have to pay the dues.

CHAIRMAN. Is there any further discussion on this motion?

(This motion is carried.)

CHAIRMAN. The next business before the meeting to-day is the question of a Court of Justice. We took this matter up at our last meeting and discussed it very thoroughly, but we took no definite action—only discussed the merits and demerits of the plan, and decided the details needed a great deal of thought before we took action. To-day I want the board to take action, and it has been suggested that if we voted to adopt the plan the matter be brought up before the whole school. I would also like to call the attention of the Board to the fact that if the plan is taken up it would have to be considered in absolute seriousness, as if it should become a laughing matter the faculty would immediately put a stop to it, and it would be of no avail whatever and a farce. Now will you please discuss the question of the Court of Justice and whether or not you wish it brought up before the school?

MISS LEHMAN. I have been thinking this matter over and it seems to me if we do have the Court of Justice we will be able to settle for ourselves those matters which formerly have been handled by the faculty, and the faculty would not have to enforce the rules which we make. As it is, the faculty are in a position to regulate and administer most of the punishments that they deem advisable so if we could enforce our own rules I think the faculty would no longer have to be considered in this connection.

CHAIRMAN. Perhaps I had better go over the plan again. The suggestion was that we have a Court of Justice or Discipline Committee to take charge of the punishment of continued infraction of rules. The Committee would consist of the President of the G. A., the Chairman of the Study Hall Committee, and the Senior, Junior and Sophomore Presidents of their respective classes.

MISS ALEXANDER. I would like to ask what would determine whether a question should come before the Court or not. Who would determine it? You just say "continued infraction of rules," and that is rather indefinite. How would you know

whether it was necessary for a question to come before the Court or not?

CHAIRMAN. You remember at the last meeting Mr. Pearson suggested that we write the Lincoln School and find out how this plan had been carried out there. I have here a letter and will read it to you:

> Lincoln has such a committee as you discussed. At the beginning of each year the council elects a chairman of the Deportment Committee. Her term runs through the year. At the beginning of each month each class president elects a class representative to this committee to serve for a month. The purpose of the committee is to judge the various offences of the students and relieve the principals of that duty. Anyone can report a student, and once reported the student stands trial. The sentence is made to fit the crime and the student has three days to appeal to the principal or director. It has been found, however, that hardly anyone appeals. The committee is trying to have drives on various types of offences. This suggestion was gotten from one of your meetings.

This will perhaps clear up Miss Alexander's question.

MISS LEHMAN. Madame Chairman, there is this to be considered. If we have this Court of Justice and people report other people, I don't believe that the rule will be carried out very well because it seems to be the policy of the school—and I think it is a very good policy myself—not to report other people. I mean it is sort of like telling tales.

CHAIRMAN. Is there any further discussion?

MISS PARSONS. I should think that this matter would be left to the Chairman of the Committee. I should think that perhaps she would have the right to determine whether or not the case was important enough to come before the school Board. Heretofore the entire question of discipline has been up to the President of the G. A. and under this plan she would not be assuming any more responsibility—in fact, not as much —as before.

MISS BEEMAN. It seems to me that as we all belong to the General Association, if we do disobey some of the rules, it is up to the girls, themselves, to decide upon the punishment. I think it would be a good idea to put this before the school, so I move that we accept this plan.

CHAIRMAN. Would you like to move rather that we recommend this plan to the school?

MISS BEEMAN. I move that we recommend this plan to the school.

(This motion is carried.)

MISS BEEMAN. I should have spoken of this before, but it seems to me . . . I wish to recommend that the Chairman look into this matter and have some solution of the problem at the next meeting.

CHAIRMAN. Was this a motion or a suggestion?

MISS BEEMAN. I only suggested it but I move that this matter be left in the hands of the Chairman.

(This motion is carried.)

CHAIRMAN. The next business before the meeting is the question of changing the date of our executive meetings. Heretofore these meetings have always been held on Wednesdays, but since Mr. Hatch has a class on that day, and in view of the fact that he is our faculty adviser and is rather necessary to our meetings, we should change the date of the meetings. Does some one wish to offer a suggestion as to another day or would you like to leave this matter up to the Chairman?

MISS ALEXANDER. I move that the date for the meeting of the Executive Board of the G. A. be determined by the Chairman.

(This motion is carried.)

CHAIRMAN. Is there any further business to come before the meeting?

MR. HATCH. Madame Chairman, just before the meeting adjourns I would like to say that I think the Executive Board to-day has passed some very important resolutions. I think you want to consider them very carefully from several angles. If you are going to assume the responsibility, which has formerly been a responsibility of the faculty, you assume a double responsibility—not only of judging but of bringing the particular offenders into Court. You say you would not want to report students, yet you do not want the faculty to be doing it all. Now, none of us likes the idea of telling on the other party, but if we are going to assume the responsibility we must devise a scheme, as Betty says, for meeting that situation. I hope you all will give that thing a great deal of careful thought as to what you would be willing to do in this case.

MISS LEHMAN. Madame Chairman, perhaps it might be well to have a committee to work on it.

CHAIRMAN. Does the Board feel it is necessary for this motion?

MISS ALEXANDER. I don't see what good a committee can do because there is nothing definite to find out.

CHAIRMAN. Of course, you all know it is the President's duty to consider the business . . . to anticipate such questions so that she may be prepared to answer them.

MISS BEEMAN. I think a committee would be good because although we might give the matter some thought if left to one person, still the other way there would be a group of girls devoting a certain amount of thought to the matter and not just one girl; and in that way I believe we would procure a more satisfactory solution of this problem.

CHAIRMAN. Then do you wish to have this committee report or merely have this business ready for the general meeting?

MISS OLIPHANT. Madame Chairman, I think it would only be necessary to have it ready for the general meeting.

MISS LEHMAN. I think this motion is directly opposed to the motion that we leave the matter to the Chairman to look into because now we are recommending that the matter be determined by a committee.

MISS BEEMAN. I think it would be wise to withdraw this motion and amend the motion that the Chairman investigate this matter.

MISS LEHMAN. I am not sure but in parliamentary procedure I believe you cannot withdraw a motion that has been seconded.

CHAIRMAN. Do you wish to rise to a point of order?

MISS LEHMAN. Yes, Madame Chairman.

CHAIRMAN. Your point of order is sustained. Any further discussion on this motion?

(This motion is carried.)

CHAIRMAN. And may I suggest to the Board that any suggestions or recommendations that you wish to make may be handed in either to me or to the Chairman of the Committee, whose name I will give to you.

Is there any further business to come before the meeting? Will someone please move that the meeting be adjourned.

MISS FOSDICK. I move that the meeting be adjourned.

CHAIRMAN. Meeting is adjourned.

ACHIEVEMENT IN HIGH SCHOOL CHEMISTRY: AN EXAMINATION OF SUBJECT MATTER

By SAMUEL R. POWERS
Associate Professor of Natural Science, Teachers College

A significant measure of the functional value of a subject of study is the extent to which it is mastered by those who study it. If a majority fail to acquire any mastery of its contents, it is clear that the subject is lacking in value for the particular group. If there are units within a body of subject matter over which comparatively few or none of those engaged in its study gain any mastery, the functional value of those units is denied. An extended experience in teaching high school chemistry suggested the need for an examination of the content of this subject which would look toward the determination of the extent to which specific items used as instructional materials are learned.

In the pursuit of this examination tests made up of many items were given to children in a large number of coöperating high schools. These were given on each of three years just before the close of school to students who had studied chemistry throughout the year. For the most part the tests used on different years were made up of distinctly different items. An exception to this was that items for a scale were selected from the material used in 1921 and used as a scale in 1922. In all, the difficulty (or extent of mastery) of 350 test items was determined. More than sixty schools coöperated. The smallest number of students counted in determining the difficulty of any item was 418; a considerable number of the items were in tests which were taken by more than 1200 students. The proportions of the project are indicated by Table I. This shows the number of items included in the tests which were used during each of three years; it shows the number of students counted in determining the difficulty of each item; and the number of schools that coöperated each year.[1]

In an extension of the study, tests were given to a group of students just entering the university who had studied chemistry in high school and who had elected to take additional courses in chemistry in the

[1] A more detailed analysis of the test results is presented elsewhere. Powers, S. R., *A Diagnostic Study of the Subject Matter of High School Chemistry.* Teachers College Contributions to Education, No. 149, 1924.

TABLE I

NUMBER OF STUDENTS TAKING TESTS AND NUMBER OF ITEMS IN EACH EXPERIMENTAL FORM

	Year Given	*No. of Items*	*No. of Students Taking Each Test*	*No. of Schools*
Test 1	1920	95	731	20
Test 2	1920	100	634	16
Test 1	1921	77	1,209	20
Test 2	1921	50	794	11
Test 2 A-1	1922	102	573	15
Test 2 A-2	1922	20	543	14
Test 3 A	1922	20	416	12
Scale Form I	1922	30	700	15
Grand Total		494		

Items duplicated in different forms	114	
Unsatisfactory items	30	
		144
Total items evaluated		350

university. The results from testing this last group is of interest, for there were in it those who had completed high school work in June before entering the university and there were others who had left high school one, two, and up to seventeen years before taking the tests. Their achievement is a measure of the extent to which the knowledge of chemistry gained in high school is retained by students after they leave school and is an indication of its functional value to those tested.

An effort was made to test a wide range of abilities. There were among the 350 test items some to test ability to do each of the following:

1. Write the name for given chemical formulas.
2. Write the formulas of substances when the chemical names are given.
3. Construct formulas from given radicals and their valences.
4. Write the chemical composition of common substances.
5. Classify elements, mixtures, and compounds.
6. Classify metallic elements according to their position in the activity series.
7. Complete chemical equations when the left hand side of the equations is given.
8. Write complete equations for given chemical changes.
9. Solve numerical problems.

There were tests of knowledge of (10) definitions, (11) laboratory and commercial processes, and (12) biography.

An analysis of the results reveals the standards for evaluating the subject matter. More than 98 per cent of those still in high school know that NaOH is the formula for sodium hydroxide. Clearly there is no question of the appropriateness of this item from the standpoint of difficulty for pupils who have studied chemistry in high school for one year. The case is not so clear for many of the items. Seventy per cent recognize the formula for sulfurous acid (H_2SO_3); 43 per cent recognize methane (CH_4); 22 per cent, potassium chlorite; and but 14 per cent recognize the formula for cream of tartar. If a standard of achievement is set at ability to recognize the formula for substances described in the textbook and used in the laboratory, it is clear that the actual accomplishment is far from the standard. Of 36 formulas included in the tests the names for 17 were written correctly by less than 50 per cent of the children who took them.

To write formulas is yet more difficult than to recognize them. Of the list of substances given to write the formula, that for potassium iodide was easiest. It was written correctly by 87 per cent. Less than 50 per cent could write the formula for copper nitrate correctly and but 22 per cent could write the formula for so common a substance as silver sulfide. Of 35 items like these, the formulas for 18 were written correctly by less than 50 per cent. Only the formulas of very common and simple substances were written correctly by more than 70 per cent of the students.

Approximately 600 students attempted to write the chemical name for the substance of which a number of materials are chiefly or entirely composed. Eighty-eight per cent knew the composition of table salt, 79 per cent knew charcoal, and 66 per cent knew marble. Less than 50 per cent was able to make the correct response for coal smoke, limestone, sand, gypsum and many others. In fact, of 60 items of this kind 48 were answered correctly by less than 50 per cent.

Similarly, there were in each of 12 groups of items a considerable number which were answered correctly by less than half of the students. Only 49 per cent were able to calculate from the formula the number of grams of water of crystallization in 250 grams of copper sulfate. Thirteen per cent were able to complete the equation for the action of copper on hot concentrated sulfuric acid. Thirty-five per cent were able to write the equation which represents the action of sodium upon water. Thirty-one per cent knew that the sensitive agent of blue

print paper is a compound of iron. Eighteen per cent knew the author of the theory of ionization. Thirty-nine per cent knew that the oxygen of commerce is obtained from liquid air. Thirty-six per cent knew that silver chloride is easily soluble in ammonia. There were 177 items in the tests to which the percentage of possible responses which were correct was less than 50.

The significance of these results may be illustrated by further analysis. If an item is so difficult that it is answered incorrectly by fifty per cent or more of the entire group, how many of the less capable students will be able to do it? In order to answer this question the students were grouped in quartiles on the basis of their scores on the form of the tests which had been scaled. Table II shows the percentage of students within each quartile who were able to do tasks of different degrees of difficulty correctly. The table shows that item number 20 was answered correctly by 53.6 per cent of 700 students. It shows further that 68.7 per cent of the students in the fourth quartile, 66.1 per cent of the third, 21.3 per cent of the second and 1.7 per cent of the first quartile students did this item correctly. These data point directly to the conclusion that items answered correctly by 50 per cent or less of the entire group will be answered correctly by very few indeed of those students in the lower half of the group when they are grouped according to scores on the scale. Practically, the results indicate that much of the work is adapted only to the ability levels of the best 50 per cent of the students.

TABLE II

PERCENTAGES OF STUDENTS FROM EACH QUARTILE WHO WERE ABLE TO DO RELATIVELY DIFFICULT TASKS

	Cases	*Scale Items*				
		20	*22*	*25*	*28*	*29*
Total*	700	53.6	47.0	36.7	24.2	23.7
Fourth quartile...	16	68.7	71.1	75.0	43.7	81.2
Third quartile.....	62	66.1	73.7	66.1	32.2	26.1
Second quartile....	87	21.3	20.2	3.4	13.5	0.0
First quartile.....	57	1.7	3.5	0.0	5.2	0.0

* The median and quartile scores were calculated from 700 scores. Only 222 scores are counted in Table I.

The results from different schools furnish another indication of the functional value (or lack of functional value) of the subject matter of high school chemistry for many of those who study it. A striking

observation is that there is such a wide range between the scores on the scale of the median students in different schools. The extreme range is nearly four times the P.E. of the entire distribution of 2000 scores from all coöperating schools. A further observation is that there is little or nothing in the results to indicate that students do certain kinds of tasks with greater facility than others. The test items were grouped as indicated above and the percentage of the possible responses which were made correctly by the pupils in each school was computed. The rankings of the schools, made on the basis of these results, were remarkably uniform. If the pupils of a given school showed poor ability to write equations, they also showed poor ability to solve problems and to do the items of the other divisions of the tests. Similarly, schools which ranked high on one division of the tests maintained their rank on other divisions. There was also a marked relationship between the rankings on the basis of the score of median pupils on the scale and on the basis of percentage of possible responses correct to the items of a given division.

In one of the test forms there were 10 items to test the ability to write the equations for chemical changes. In one school 90 per cent of the possible responses to these items were made correctly. In another school but 8 per cent were made correctly. One of the tests consisted of 77 items. In the school which did the best on the scale 87 per cent of the possible responses to the 77 items were made correctly. In the school which did poorest on the scale but 34 per cent were made correctly. Another test consisted of 60 items. In one school 68 per cent of the possible responses to these were made correctly; in another but 15 per cent were correct.

The relationship between school enrollment in chemistry and scores on the tests is too marked to be accidental. There were 16 of the coöperating schools in which the enrollment in chemistry was less than 20. The score of the median student in 13 of these 16 schools is below that of the median student of the entire distribution (2000 cases). There were 25 schools in which the number of students enrolled in chemistry ranged from 20 to 60. In 15 of these the score of the median student was higher than the standard median. There were 14 schools in which the number of students taking chemistry was more than 60. In 8 of these the median was lower than the standard median. There was a marked tendency for the schools with small enrollment in chemistry to do poorly on the tests. Schools enrolling from 20 to 60 in chemistry usually did well. The very large schools

did markedly better than the smallest schools but did not do so well as those of the middle group.

What chance is there that students in the best and poorest schools will be able to do correctly tasks of different difficulties? The answer to this question was obtained for a number of items for which the per cent of total possible responses which were correct was between 40 and 50. Approximately 85 per cent of the possible responses to items of this difficulty were made correctly by the pupils in the two schools which did best on the scale. Only 22 per cent of the possible responses to these items were made correctly by the pupils in the two schools which did poorest on the scale. Again, there were 102 items in one form of the test; 77 of these were answered correctly by 50 per cent or more of the students in the two schools which did best on the scale. Only 18 of these were answered correctly by 50 per cent or more of the pupils in schools in which the median scale score was 88 or less. Fifty per cent of the pupils scored 88 or less, and the median score in 60 per cent of the coöperating schools was 88 or less. Of the 350 test items used in this investigation 103 were answered correctly by less than 30 per cent, 136 by less than 40 per cent, and 177 by less than 50 per cent. These items may be appropriate for use in the larger schools in which those who elect chemistry are for the most part looking toward college preparation. It appears, however, that items which are so difficult that they are answered correctly by 50 per cent or less mean very little to most of the pupils in more than half of the coöperating schools. The standing of some of the schools is in fact so low that it suggests the entire futility of much of the high school work which is being attempted in chemistry.

Another measure of the functional value of high school chemistry is the extent to which the subject matter, once mastered, is retained after leaving school. The functional value of that which is forgotten cannot be very large. A test consisting of 77 items which test seven different kinds of abilities was given to a group of 349 students just entering the University of Minnesota in the fall of 1921. All had studied chemistry in high school and had elected to take additional chemistry in the university. Nearly all were men and most of them were entering the College of Engineering. A large proportion of them had completed high school chemistry in June of 1921 and had entered the university in September. For these the time interval between training in chemistry and taking the test was three months. There were others who had completed high school chemistry in June of 1920; for these the time

interval was one year and three months. There were others for whom the time interval was two, three and up to five years and more. These students were grouped according to the year during which they had studied chemistry in high school. The percentage of the possible responses which were made correctly by those of each group was then determined. The results are shown in Table III. The table shows that 72 per cent of the possible responses to the items of the first division of the test were made correctly by students still in high school. Seventy-one per cent of the possible responses were made correctly by those who had been away from instruction for three months and 34 per

TABLE III

PERCENTAGES OF POSSIBLE RESPONSES FOR THE ENTIRE TEST AND FOR EACH DIVISION OF TEST I WHICH WERE CORRECT

	Items							*Entire Test*	*Cases*
	1	*2*	*3*	*4*	*5*	*6*	*7*		
High school students.....	72	63	82	64	68	51	49	63	1,200
Entering freshmen									
1921	71	43	88	52	72	48	36	58	25
1920	63	29	66	34	60	25	9	40	25
1919	50	20	40	31	52	18	4	31	25
1918	46	18	38	26	56	14	3	27	21
1917 and earlier.....	34	10	24	14	43	6	0.6	19	17

cent were made correctly by those who had been away from instruction for four years or more. This division tests ability to write the names of given formulas. The second division is more difficult than the first and appears to be more rapidly forgotten. This is a test of ability to write the chemical formulas to correspond with the names of substances. The third division is a test of ability to construct formulas from given radicals and their valences. This is the easiest division for those still in high school and for the 1921 and 1920 groups. The fourth division tests ability to classify metallic elements according to their position in the activity series. The fifth tests ability to classify elements, mixtures and compounds. Those who have been out of school for more than two years appear to retain more of this ability than of any other tested. This observation suggests the conclusion that this ability has the largest functional value of any of those tested. The sixth division tests ability to complete chemical equations when the left-hand members of the equations are given, and the seventh division tests ability to write complete equations when only the descriptions of the

chemical changes are given. Each of these divisions is very difficult for students still in high school, and such ability to do these items as is acquired is rapidly lost. Less than one-tenth of the possible responses to the items of the seventh division were made correctly by those who had been away from instruction for as much as one year, and there was but one response made correctly on all the papers examined of those who had been out of school for as much as four years.

Scores on the scale were computed for each of these entering students. The range between the score of the median student of the group still in high school and the median of the group which had completed chemistry in high school three months before taking the tests is nearly 1 P.E. on the distribution of the scores of pupils still in high school. By four years the range is more than 2 P.E. This indicates that approximately 92 per cent of those still in high school do better on the test than the median pupil of the group who had studied chemistry four years earlier and who had, after the time interval, come to the university and elected to take more chemistry. These data furnish additional evidence that much of the instructional efforts in high school chemistry are misspent for they show that those abilities, the accomplishment of which are set as objectives of instruction, are, when once acquired, rapidly forgotten.

Each of the tests of subject matter points to the conclusion that a considerable proportion of the content of high school chemistry is of little or no value for many who study it. Certainly there are large numbers who effect no mastery of it. It appears that there are indeed many schools in which nearly none of the students obtain any mastery of the subject matter which is presented to them. The second test shows that such mastery as is obtained is rapidly lost by forgetting when the student has left school.

In 1854 President Francis Wayland of Brown University, in an address entitled "A Review of the Progress of Education in this Country During the Past Twenty-five Years," gave this characterization of the work in chemistry in secondary schools: "I have no doubt that thousands of the pupils of the somewhat advanced schools have gone through a system of chemistry supposing that they have studied that science, . . . and whose whole knowledge consisted in the recollection for a few weeks of some of the terms of chemical nomenclature."[1] In the light of the facts of this paper it seems that this statement furnishes

[1] Francis Wayland, *A Review of the Progress of Education in This Country During the Past Twenty-five Years.* Lectures delivered before the American Institute of Instruction at Providence, 1854, p. 8.

still, three quarters of a century later, a fair definition of the educative value of chemistry for many students.

There is no escape from the conviction that there is urgent need for reorganization, and it is not surprising that this is so. The history of the teaching of chemistry in high school shows that the factors which have operated to determine the present course have not in any sense been purposefully directed toward relating chemistry to the needs of those who study it. One of the main objectives of instruction in high school chemistry is college preparation. A second objective frequently stated is to give a clear idea of fundamental principles. This second objective is one which in the first place is not achieved and which in the second place would be of doubtful value for general education if it were.

The search for values of instruction in such subject matter as that surveyed in this study cannot be expected to yield large returns. The findings suggest the possibility of harmful influence. The possibility of harm is found in the fact that the subject matter which is the basis of instruction is material which many do not learn. It is material which is well adapted to give practice in failure and material which deadens the initiative. The need is now evident for an additional study which shall be devoted to the construction of a curriculum.

Curriculum studies in science must look to larger divisions than the individual units of physics and chemistry. Some of the difficulties which students encounter are no doubt due to the fact that they are plunged rather suddenly into the manipulation of materials which are for them entirely new. An organization of the sciences so that each succeeding course is related to and built upon the preceding one will result in the inclusion of science from many fields in the earlier course. The course may be graded so that the elementary units will provide for experiences as rich as possible with scientific material, and subsequent ones will build upon these earlier courses and provide increasing opportunity for practice in attacking problems by the scientific method. There is need for a curriculum study which will determine the materials which should be selected to give to students the kinds of experience, knowledge, habits, etc., which will be of largest value. In brief, such a study will look to a determination of what people need to know about science and then to its organization into teachable units appropriate for the ability levels of high school pupils.

THE WORK OF THE EDUCATIONAL FINANCE INQUIRY

By CARTER ALEXANDER
Assistant Director of the Educational Finance Inquiry

What public education costs, how the money is spent, where these costs are tending, how the funds to meet them are secured or can be secured, are types of the vital problems upon which the Educational Finance Inquiry has been working. For two and a half years it has carried on this work. Now it has reached a stage where it has only to see its publications through the press and in a few months pass into history. The present is therefore a fitting time to review its labors.

ORGANIZATION OF THE INQUIRY

The Educational Finance Inquiry was due to the growing conviction of both laymen and professional educators that something had to be done if public education were to be safely maintained. The increasing cost of public education and the practicability of obtaining the necessary financial support for such education were of grave concern to both groups. The need of a clear perspective of these and allied problems was felt by both groups to be imperative. Both felt that little or nothing could be done until the facts were known and a profitable study of the meaning of these facts could for the first time be begun.

The matter of a thorough investigation of the problems involved was considered by the Citizens' Conference on Education in Washington called by the United States Commissioner of Education in May, 1920. It was also taken up by a conference of educators at the meeting of the Department of Superintendence of the National Education Association at Atlantic City in February, 1921. As a result of this later meeting, a committee was appointed to draw up a plan and to ask support for such an investigation. As a result of the work of this committee, contributions were made by the Commonwealth Fund, the General Education Board, the Carnegie Corporation, and the Milbank Memorial Fund.

With the funds assured, the committee was ready for organization. The coöperating foundations wisely declined to have any responsibility for the conduct of the investigation other than supplying the funds, on the ground that the findings must be free from any charge of influence by corporate interests. The committee members were unwilling to handle the money themselves and at the same time were unwilling to turn it over to any agency which might attempt to dictate methods or findings. In this situation the American Council on Education generously agreed to appoint the commission recommended, to sponsor the inquiry, act as advisor, handle the funds, and still place the entire responsibility for the work to be undertaken on the Commission.

As soon as the Inquiry was reasonably well assured, a Headquarters Staff was organized at Teachers College, Columbia University, where Dean Russell gave the use of a room with janitor service, light, heat, and electric current, for a period which proved to be three years. The Commission met for the first regular meeting in late October, 1921, and held seven meetings of a week each, the last in January, 1924.

PERSONNEL OF THE INQUIRY

It was the opinion of all concerned that the Inquiry should have a personnel worthy of the magnitude of the problems involved. To this end, the Commission in charge was made up of the following: George D. Strayer, Professor of Educational Administration and Director of Division of Field Studies, Institute of Educational Research, Teachers College, Columbia University, New York City, Chairman of the Commission; E. C. Brooks, State Superintendent of Public Instruction, Raleigh, North Carolina, later President of North Carolina State College of Agriculture and Engineering; Samuel P. Capen, Chancellor of University of Buffalo, Director of American Council on Education and member *ex officio* until December 1, 1922; Ellwood P. Cubberley, Dean of School of Education, Stanford University, California; Edward C. Elliott, Chancellor of University of Montana, later President of Purdue University, Lafayette, Indiana; Thomas E. Finegan, State Superintendent of Public Instruction, Harrisburg, Pennsylvania, later Director of the National Transportation Institute, Washington, District of Columbia; Robert Murray Haig, Professor of Business Organization, School of Business, Columbia University, New York City; Charles R. Mann, Director, American Council on Education, Washington, District of Columbia, and member *ex officio* since December 1, 1922; Victor Morawetz. attorney-at-law, New York City; Henry C. Morri-

son, Professor of Education and Superintendent of Laboratory Schools, University of Chicago, Chicago, Illinois; Herbert S. Weet, Superintendent of Schools, Rochester, New York.

In addition to the Headquarters Staff at Teachers College, separate staffs were established in the states of Illinois, Iowa, and California. The Headquarters Staff was directed by Dr. George D. Strayer of the Commission; the Illinois Staff by Dr. Henry C. Morrison of the Commission; the Iowa Staff by Dean William F. Russell of the University of Iowa; and the California Staff by Dr. Ellwood P. Cubberley of the Commission, assisted by Dr. Jesse B. Sears of Stanford University.

The details of the preparation and experience of the Commission and the Staffs for their special work would make a notable showing. Space, however, is not available for this. Suffice it to say here that there was no geographical section of the country and comparatively few states, no phase of educational activity, practically no type of survey work or of legislative commission affecting taxation and educational finance, in which one or more of the members of the Commission or Staffs had not had adequate experience.

THE INQUIRY AT WORK

At the start of the Inquiry it was easy to give glibly its general aims. But as soon as any one of them was seriously attacked with a view to outlining subordinate problems for actual solution, the difficulties swarmed out as from Pandora's box.

What constitutes public education? Granted the costs of present education were found, what would they be worth when taxpayers without really knowing it are clamoring for an estimate of the cost of educating all children with schooling of a definite known quality? How could the states be compared and on what items? How could the future action of the people toward public education, an action on which future education costs depend, be predicted? Should the Inquiry state facts and a summary of their meaning or add definite recommendations as to what ought to be done? Above all, how could the Commission or any group of men reach daylight once they got into the labyrinthine depths of school financial records?

Such were the difficulties in determining the Inquiry's aims. But once the Commission and Headquarters Staff set resolutely to work, the aims began to clear up. The routes along which the Inquiry would travel were mapped. Public education would be considered as "tax-supported" education offered in definitely organized schools. The

quality of education could not be determined accurately enough to estimate what education of a given quality would cost throughout a state. A comparative study of the states on all profitable and feasible items would be made. At least one state would be worked intensively. A few other states where members of the Commission lived would also be studied. The treatment of future costs was so baffling a problem that each man was to be left free to do what he could on it. The Inquiry was to be regarded as a fact-finding body whose function was primarily to discover and present clearly the major issues and truths on the present situation, and to make such recommendations as seemed clearly and incontrovertibly to grow out of the facts presented. As a safeguard on this last, each volume was to be reviewed by the Commission before publication.

New York was selected for the first state to be studied because it was generally believed to have about the best financial records on schools, because it had almost every possible educational institution, embraced one-tenth of the country's population and showed nearly every possible educational, economic, social, and geographical variation. The states of Illinois and California were chosen because members of the Commission could work in them, and Iowa because the previous work of Dean William F. Russell of the University of Iowa could be utilized at relatively little expense.

Finally, the Inquiry wound up with thirteen volumes for publication as listed at the end of this article. Volume I appeared in December, 1923; Volume VI in February, 1924; Volume II in March, 1924, and the others are coming out as rapidly as they can be put through the press.

HIGH SPOTS IN THE FINDINGS

At this date when only three volumes have come from the press, it is out of the question to try to point out the high spots of the entire series. However, it is of profit now to set forth some of the important findings in the two most important volumes already published, and to give passing mention to the others.

Volume I, *The Financing of Education in the State of New York*, while of special interest in that state, has at least two important items of value to educators everywhere. First, this volume will in time almost certainly cause men and women engaged in education to think about financing education in markedly different terms than they have heretofore used. Second, school workers in almost every field

of education will find new and convenient ways of computing or viewing the costs of their special work.

Typical new or relatively new ways of viewing educational costs are the following: (1) To calculate the actual cost of education for a state or community, find out just what the educational program is, and then calculate the cost of that program. Most states and communities have only the vaguest ideas regarding the educational programs upon which they have embarked. Much of the unrest on educational costs in these communities is due to the natural fear of the unknown. (2) Any statement of the total cost of education for a given year should include, in addition to cash expenditures, the "accrued economic cost." This cost is the total of current expense, plus plant used up in the year, plus a fair interest on the value of the plant. This type of consideration will have two values. First, it will help to disarm critics who talk about huge expenditures for school buildings without taking into account that a building used for years cannot fairly be charged to the one year in which it was erected. It will also tend to prevent damage by the zealous but superficial thinker who focuses the taxpayer's attention on current expense only, to the neglect of expenditures for the plant without which the children could not be assembled for teaching. The taxpayer sooner or later will demand the total facts on the situation and should in fairness be given these at the start.

For new ways of viewing resources for education, the following are typical: (1) Education is in a very real sense productive. It does not merely consume the taxes derived from property or business activities that are ordinarily considered to produce wealth. Support may, therefore, be safely diverted to it from such things as factory construction or the purchase of pleasure automobiles and other luxuries whenever there is sufficient reason for abstaining from the objects formerly consumed. (2) Educational expenditures should be compared with income and the index of retail prices rather than simply with full property valuation and actual dollars as has usually been done hitherto. The comparison with income gives a better idea of the ability of the community to support education than does the citation of property values alone. Using the index of retail prices offsets somewhat the well-known but elusive changing value of the dollar.

The new methods of computing costs include ones to meet the needs of almost every kind of practical school worker. Particularly striking methods are: The separation of high school and elementary costs by the use of a ratio based on teachers' salaries, which are usually very

accessible no matter how incomplete the other financial records may be; the calculation of accrued economic costs; the prediction of future educational costs.

In the particular findings of interest in all states, the following are typical: The Inquiry found nothing to indicate a probable decrease in educational costs, but much evidence to indicate that costs will keep up. Teachers' salaries, outside the larger cities and in certain types of school work, are noticeably lower than in a number of states with which New York is commonly compared. In all sizes of communities and in all grades, the so-called fundamentals—English, arithmetic, and the social studies—usually receive two-thirds or more of the total cost and time devoted to teaching. Eliminating the special subjects in elementary education, for the elimination of which there is frequently a demand, would save only a negligible amount in the total cost of elementary schooling for a child. The state is able to afford practically whatever schools the people want. The present tendency is toward the equivalent of a state educational system supported by taxes of uniform weight throughout the state, but state aids to local communities are neither so large, nor do they equalize educational support so much, as is commonly supposed.

Volume VI, *Financial Statistics of Public Education in the United States, 1910–1920,* was issued to meet numerous requests from all parts of the country. It will aid in answering questions as to probable future educational costs for all who would base their statements about such costs on a solid basis of fact rather than on mere opinion. Throughout the volume, the states are ranked from high to low (for example see Tables I and II) and from high to low within each geographical division.

Of actual findings within the volume the following are of interest: In spite of its rapidly increasing costs, education in 1920 had a noticeably smaller percentage of national and state governmental expenditures than in 1910. Only in the case of local governmental expenditures did its percentage increase in this period. For percentages and per capita expenditures for the several states, see Table I and Diagram 1. Between 1910 and 1920 the cost for highways increased at a far greater rate than the cost for education in all governmental areas except local ones. While in 1920 public education expenditures amounted to 1.7 per cent of the income of the people of the United States, individual states devoted markedly different percentages of their income to this purpose. (See Table II.) For the country as a whole, the proportion of total educational expenditures devoted to elementary

TABLE I

PERCENTAGE OF STATE AND LOCAL GOVERNMENTAL EXPENDITURES GOING TO EDUCATION IN THE DIFFERENT STATES, 1910, 1920 [1]

1910	%	1920	%
1. Idaho	47.7	Iowa	44.7
2. Nebraska	45.1	Texas	43.3
3. North Dakota	41.3	Arizona	43.0
4. Oklahoma	41.1	Indiana	42.3
5. Kansas	39.1	Oklahoma	41.9
6. Texas	39.1	North Dakota	41.0
7. Iowa	38.2	Alabama	37.5
8. Michigan	37.4	New Jersey	36.8
9. West Virginia	37.3	Virginia	36.5
10. Utah	37.3	Montana	35.4
11. Vermont	35.9	Utah	34.2
12. South Dakota	35.7	Pennsylvania	33.4
13. Minnesota	34.0	Kansas	33.1
14. Wisconsin	33.6	Colorado	32.8
15. Nevada	32.8	Idaho	32.5
16. Arkansas	31.5	Georgia	32.2
17. Wyoming	31.2	West Virginia	31.8
18. North Carolina	31.1	Wisconsin	31.3
19. Pennsylvania	29.9	Wyoming	31.0
20. Virginia	29.8	N. Carolina	30.7
21. Indiana	29.1	South Dakota	29.7
22. Illinois	27.6	Minnesota	28.9
23. South Carolina	27.4	Illinois	28.6
24. Colorado	27.2	Tennessee	28.4
25. Connecticut	25.8	Michigan	27.4
26. Massachusetts	25.8	Maine	27.4
27. New Jersey	25.6	N. Hampshire	27.2
28. Maine	25.2	Connecticut	27.0
29. New Mexico	25.2	California	26.7
30. Alabama	25.1	New Mexico	26.5
31. Montana	25.0	Vermont	26.4
32. Rhode Island	24.9	Florida	25.8
33. Kentucky	24.8	Washington	25.7
34. Missouri	24.7	Dist.Columbia	25.2
35. Mississippi	24.5	Nebraska	24.8
36. Arizona	24.4	Missouri	24.8
37. California	23.9	Kentucky	22.0
38. Tennessee	23.5	Ohio	21.8
39. Georgia	23.4	S. Carolina	21.2
40. New Hampshire	23.4	Mississippi	21.1
41. Oregon	22.1	Nevada	20.9
42. Dist. Columbia	21.4	Louisiana	20.9
43. Louisiana	21.2	Delaware	20.7
44. Washington	21.1	Massachusetts	20.3
45. Delaware	20.9	Arkansas	19.7
46. Florida	19.3	Rhode Island	19.4
47. Ohio	19.1	New York	19.3
48. Maryland	16.7	Oregon	18.5
49. New York	16.1	Maryland	16.1

TABLE II

PERCENTAGE RELATION OF STATE AND LOCAL EDUCATIONAL EXPENDITURES TO INCOME IN THE DIFFERENT STATES, 1910, 1920 [2]

1910	%	1920	%
North Dakota	3.4	Montana	4.4
Utah	3.3	North Dakota	4.0
Nevada	2.7	Utah	3.8
Idaho	2.4	Idaho	3.4
Montana	2.4	Arizona	3.1
South Dakota	2.3	New Mexico	3.0
Colorado	2.3	Minnesota	2.8
Washington	2.3	Indiana	2.7
Minnesota	2.3	South Dakota	2.6
Kansas	2.2	Nevada	2.3
Oregon	2.2	Colorado	2.3
Vermont	2.1	Kansas	2.3
Indiana	2.0	Wyoming	2.2
Wisconsin	2.0	Iowa	2.2
Massachusetts	1.8	Washington	2.1
Nebraska	1.8	Nebraska	2.1
Iowa	1.8	Oklahoma	2.0
Maine	1.7	Oregon	2.0
Missouri	1.7	Wisconsin	2.0
California	1.6	Michigan	1.9
New Jersey	1.6	California	1.8
Pennsylvania	1.6	Vermont	1.8
Michigan	1.6	West Virginia	1.8
Illinois	1.6	Florida	1.7
Ohio	1.5	New Jersey	1.7
West Virginia	1.5	Maine	1.7
New Mexico	1.5	Ohio	1.7
New Hampshire	1.5	New Hampshire	1.6
Oklahoma	1.4	Missouri	1.5
New York	1.4	Connecticut	1.5
Dist. Columbia	1.4	Pennsylvania	1.5
Rhode Island	1.4	Texas	1.4
Kentucky	1.4	Virginia	1.4
Wyoming	1.3	Louisiana	1.4
Mississippi	1.3	Illinois	1.4
Texas	1.2	North Carolina	1.3
Louisiana	1.2	Rhode Island	1.3
Connecticut	1.2	Tennessee	1.2
Tennessee	1.2	Massachusetts	1.2
Arkansas	1.1	Alabama	1.2
Arizona	1.1	Mississippi	1.2
Virginia	1.1	New York	1.2
Florida	1.1	Arkansas	1.1
Alabama	.9	Dist. Columbia	1.1
Georgia	.9	Georgia	1.1
Delaware	.9	Delaware	1.0
Maryland	.9	Kentucky	1.0
North Carolina	.8	South Carolina	1.0
South Carolina	.8	Maryland	.8

* To facilitate comparison, these tables have horizonal lines dividing the 48 states and District of Columbia roughly into fourths of twelve cases each with the middle case between two lines.

and secondary schools is still large, but it decreased from 89.5 per cent to 86.1 per cent in the decade. Expenditures for buildings and sites comprised a markedly smaller percentage of the total educational expenditures in 1920 than in 1910. Thirty-one states had a higher percentage of their total state and local debt incurred for education

[1] From Table 3 of *Financial Statistics of Public Education in the United States, 1910-1920*, by permission of the Educational Finance Inquiry and The Macmillan Company.
[2] From Table 20 of same.

in 1920 than in 1910, and 17 had a lower percentage. The support of public education comes primarily from local sources which in 1920 supplied 71.7 per cent of the total revenues for all schools. Of the state revenues for education nearly 80 per cent are derived from state tax revenues, chiefly from school property taxes. The permanent school fund contributes little relief to the taxpayer in most states.

This volume will be almost invaluable to workers in education who are interested in the educational progress of any particular state. The greatest value to be secured from it comes from taking the comparative figures on any state and trying to understand what they mean. For example, an educator from Michigan says of the drop of Michigan from eighth to twenty-fifth place (Table I) and from 37.4 per cent of governmental expenditures for education in 1910 to 27.4 per cent in 1920, that the drop is due to the building of roads because "the automobile hit Michigan when the state did not have any roads but it did have schools fairly well provided for." He points to Table II which shows that Michigan increased her percentage of income devoted to education from 1.6 per cent in 1910 to 1.9 per cent in 1920. An educator from Massachusetts explains the drop of that state in Tables I and II by saying that the state stood relatively high in its provision for education in the first place and was consequently freer to spend more money on lines of social betterment which are not taken care of in many of the states. A prominent educator in Indiana points with pride to the way his state stands out in its section on Diagram 1. The governor of one state, high on both the percentage of expenditures and the percentage of income for education, writes that the schools in that commonwealth are not worth the money they cost. Several state commissioners of education have already abstracted the volume and sent the results over their states. These are only samples received by the Headquarters Staff of the uses to which this volume has already been put.

The other volumes of the Inquiry will doubtless prove equally valuable for the particular groups to which they will appeal. (See list on page 221.)

THE CHIEF CONTRIBUTION OF THE INQUIRY

The greatest good from the Inquiry, in the writer's judgment, will not be immediate. Nor will it consist only of things on which one can put a finger. This is written despite the facts that the list of such specifically

valuable things is lengthy and that practically all states will soon have various similar studies, now that the pioneer work on the methods of study is available. This good lies rather in certain somewhat intangible and deferred values such as changed points of view of both educators and laymen and in the training of school administrators.

The volumes "will undoubtedly stimulate a wholesome type of thinking about school finance which has never been possible before because

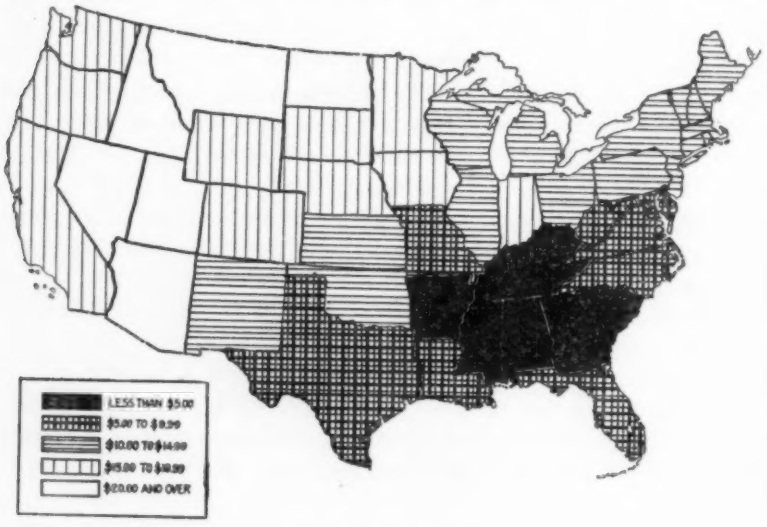


DIAGRAM 1 [1]

STATE AND LOCAL EXPENDITURES PER CAPITA FOR EDUCATION, 1920

the factual basis has not been at hand in any such comprehensive body of material. There will probably follow a series of discussions in the public press as well as in the technical journals." [2] As a result educators and teachers generally will acquire a better understanding of the complexity of the problems involved in financing education, a keener sympathy with the taxpayer, and a surer realization that many of the difficulties of educational finance arise from the need of general tax reform which cannot possibly be secured for some time. The interested board members, citizens or taxpayers, who read the volumes or any fair summaries and popularizations of them, are sure to reach conclusions like the following: Educational costs will undoubtedly increase. Many

[1] From Diagram 3 of *Financial Statistics of Public Education in the United States, 1910-1920*, by permission of the Educational Finance Inquiry and The Macmillan Company.
[2] *School Review*, Editorial, March, 1924, p. 162.

of the present difficulties are due to forces almost wholly beyond the control of educators alone. Many of the popular notions regarding possible economies and readjustments have had no foundation in either sound practice or sound theory.

As a result of these volumes "there will certainly be a series of courses in colleges of education on school finance and other related aspects of school administration."[1] This means that school administrators will in time have a mastery of educational finance comparable to their mastery in other fields where they are now considered to be more successful.

One thing stood out above everything else in the writer's prolonged contacts with the Inquiry. This was the increasing confidence of the members that the problems involved in financing public education would be satisfactorily solved within a reasonable time. The prospect on several problems at the start of the Inquiry was of necessity gloomy. In the progress of the work, depressing facts and tendencies, particularly those connected with imperfect tax systems, burdensome taxes, inequalities in educational opportunity, and increases in school debt, came to light. But the work closed with a very noticeable feeling of optimism over the outlook. At the end when all the evidence was in, those connected with the Inquiry seemed to have a far firmer confidence in the ability and willingness of the American people to give adequate support to public education and to see that conditions were changed so that such support could be given.

PUBLICATIONS OF THE EDUCATIONAL FINANCE INQUIRY[2]

VOLUME I. THE FINANCING OF EDUCATION IN THE STATE OF NEW YORK.
George D. Strayer and Robert Murray Haig, Members of the Commission.

VOLUME II. ELEMENTARY SCHOOL COSTS IN THE STATE OF NEW YORK.
R. O. Stoops, Special Investigator for the Headquarters Staff.

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[1] *School Review, loc. cit.*

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EDUCATIONAL SIGNIFICANCE OF PHYSICAL STATUS AND OF PHYSIOLOGICAL, MENTAL, EMOTIONAL, AND SOCIAL MATURITY

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Between scholastic achievement and general mental ability, both carefully measured by objective tests, substantial correlations are usually found. It has become customary to see in such facts evidence that educational achievement is mainly determined by innate capacity. It is recognized, however, that the correlation of achievement and capacity, as actually tested, is never perfect; indeed, with representative groups, it is rarely above a coefficient of 0.70, which allows for appreciable and numerous discrepancies. The teacher or school official, charged with the responsibility of classifying, promoting and demoting pupils, is puzzled by these discrepancies and keenly feels the need of an explanation of them. To many, it appears, upon inspection of the arrays of mental indices and scholastic performances, that factors other than intelligence should be taken into account. There is now, as there long has been, an urgent need for research directed to appraisement of human traits which may now be measured objectively or reasonably well gauged by observers, for the purpose of ascertaining what other factors, if any, should be taken into account in setting up expectations or goals of achievement.

I. CURRENT THEORIES CONCERNING THE FACTORS INFLUENCING ACHIEVEMENT

Among scientific workers in education and psychology at the present time there are theories, conflicting in whole or part, concerning the character of factors which may influence achievement and adjustment. A few representative views will be presented before taking up the main purposes of this paper, viz., a presentation of certain evidences accumu-

lated since 1893, and certain results of an experimental study conducted last year in the Horace Mann School.

One view is that the correlation between achievement and capacity would be essentially perfect except for various errors, accidents or interferences which tend to reduce it. Among the errors are those produced by defects in the tests, mistakes or bad judgment of testers, and variability in the performances of the subjects, each of which tends to reduce the correlation. Among accidents are such influences as loss of schooling, differences in efficiency of methods of learning and teaching, in home opportunities and encouragements. Among the interferences are such influences as the custom of grading by age, by physical size or by the length of schooling rather than on the basis of sheer capacity, which results in "pushing" a large number of the duller big pupils to the limits of achievement while permitting and often encouraging many of the bright small pupils to lag behind their possibilities.[1] To those of this view, the remedy is not the consideration of physical and other traits, but the better appraisement of and adjustment to, the innate mental capacities of the pupil.

A second view, perhaps the most familiar of all, is that while native aptitude may establish a limit to the rate and complexity of accomplishment, this limit is rarely reached but is approached in degrees that depend upon other traits. While native capacity, in other words, may be a limiting function, the "accomplishment quotient" is determined by other traits. Some would maintain that completely to account for an individual's achievement relative to his capacity would require an independent appraisement of the efficiency of the sensory mechanisms, the regulative glands, the stage of anatomical, physiological and social maturity, the strength or maturity of numerous instinctive tendencies, emotional propensities, the stability of nervous control, the nature of habits previously acquired, and various complex traits such as trustworthiness, diligence and ambitiousness. These traits are viewed often as being not closely related but more or less independent. At least, they are viewed often as influencing achievement specifically; some of them greatly, others slightly. The implication of this view is that many traits (including intelligence) should be taken into account in classifying pupils or establishing goals for them. If this view is correct there is before us the huge task of appraising the relative weights

[1] See Franzen, R., *The Accomplishment Ratio*, Teachers College Contributions to Education, No. 125, 1922.

which each of the traits should be given in forming a composite score or judgment.

A third and somewhat newer view treats many of the dynamic traits as functions of growth, finding them not independent but correlated. Growth, some assert, is the expression of certain general influences—the recent work on the endocrine glands seems to have fathered this idea—which affect simultaneously although not necessarily equally intelligence, diligence, endurance, ambition, emotionality, social inclinations and various other capacities. These writers offer various "age" concepts: mental age, anatomical age, physiological, social, emotional, educational and other ages. Being all correlated, in various degrees, with the same thing—the alleged source of growth—these ages are necessarily correlated, variously, with each other. They urge, therefore, that predictions of achievement be based not only upon intelligence but also upon maturity, which is sometimes treated as a rather general quality or characteristic of the individual as a whole. For those of this view, the outstanding need is the discovery of some measure of general maturity.

Since the last view has received considerable attention recently and forms one of the problems of the present study, a few representative statements of it are quoted.

Naccarati and Lewy-Guinzburg offer the following hypothesis: "The same hormones which promote the morphogenesis of the skeleton and muscles of the limbs, promote also the development of the psychomotor and psychosensory centers, and would lead to the conclusion that there exists a correlation between the morphological development and the intelligence of the individual." [1]

W. F. Dearborn probably had in mind a conception of growth as a central factor or group of factors when he wrote: ". . . we are dealing with an individual organism whose changing behavior (as noted by the mental tests) is only one further indication of its development. These findings in regard to physical development need to be combined with those in regard to the mental development of the same individuals. The results should give a better measure than hitherto available of the relative development of the individual organism as a whole." [2]

Rotch, in the following quotation, likewise appears to have in mind a form of general maturity: "In an extensive study of the carpal

[1] Naccarati, S. and Lewy-Guinzburg, R. L., "Hormones and Intelligence," *Journal of Applied Psychology*, Vol. VI, pp. 221-34 (1922).
[2] Dearborn, W. F., "Some Problems of Research in Education," *School and Society*, pp. 675-76 (June 23, 1923).

bones and the epiphyses from birth to the time of union, I have found that they present a complex index of the entire osseous development of the individual and advance in regular progression step by step. An important observation which I have made in regard to the metabolism of the epiphyses in relation to that of the brain, is that where there is a delayed mental development, the development of the epiphyses and carpal bones corresponds more to that of the brain than to the general physical condition." He then describes by sample pictures "what might be called the technique of determining by means of the Roentgen method the degree of mental and physical capacity and the means of preserving the necessary equality of mind and body."

In certain other views now receiving wide currency, physical—anatomical or physiological—maturity is conceived to have a most potent influence in determining adjustment and achievement. In many respects these opinions are similar to those of Rotch and Dearborn. Certain physical traits are alleged to be an index of physiological or anatomical maturity, which is, in turn, a symptom of maturity of a general sort. This implication is not always stated, perhaps not always realized, but it is often a justifiable deduction. Concerning the physical traits that are most adequate as indices of maturity, moreover, agreement has not been reached. Both of these facts appear in the following quotations.

Woodrow, in his *Brightness and Dullness in Children,* writes: "According to psychology, every child has a number of different ages, each of which represents an appraisement of some one of the factors comprising his complex existence. The four most important are the chronological, mental, pedagogical and physiological or anatomical ages" (p. 97). Of the latter, he further writes: "His physiological age records the extent to which his bodily functions have developed. It is distinguishable from anatomical age, which expreses the stage of growth of the bodily structures, but physiological and anatomical age are so closely related that for educational purposes they may be united under the head of anatomical age. . . . We have already seen that mental ability varies with anatomical age. It is reasonable, therefore, to expect some correlations of mental ability with height and weight. Such correlation is now well confirmed. . . . It is clear that a higher degree of brightness goes hand in hand with better physical development."

Baldwin, in his study *The Physical Growth of Children from Birth*

to Maturity,[1] expresses beliefs equally emphatic. "Physiological age is, the writer believes, directly correlated with stages of mental maturation. . . . The physiologically more mature child has different attitudes, different types of emotions, different interests, than the child who is physically younger though of the same chronological age. . . . Physiological age has a direct bearing on pedagogical age, as many of our schools are beginning to recognize. The larger and physiologically more mature child may be able to do certain types of school work better, although of inferior ability in specific traits which have been greatly emphasized by school curricula. . . . That there is a direct relationship between social age and physiological maturity needs only to be mentioned to be evident."

The legitimate interpretation of these statements is that physiological age is a very reliable index of general maturity, since it is indicative separately of several "aspects of maturity." Indeed, in a later publication (*Twenty-Third Yearbook of the National Society for the Study of Education*) he states that "Physiological age . . . is the basic age" (p. 36).

In the article in the *Yearbook*, Baldwin restates his thesis, not altogether clearly students have found, but perhaps most definitely in the following: "The accompanying cut illustrates several different types of superior or gifted children for whom educational adjustments must be made on the basis of the principles formulated in this chapter." (The cut represents Baldwin's familiar four cases.)

"1. The four pupils are of the same chronological age.

"2. In physiological age they differ at least four chronological years, as is shown by their height and general growth, development of the carpal bones, and adolescent stages of maturity.

"3. All are above 130 I.Q., the difference in performance on this scale being probably correlated with the maturity factor.

"4. In social age or stages of maturity, as shown by social attitudes and participations in school and extra-curricular activities and in clubs and parties, the differences are as marked as the differences in physiological age.

"5. In educational accomplishment, as measured by subject matter, the range is three years. The smaller boy is in the 9th grade with much supplementary work including manual training, the construction of radio sets; . . . the larger boy is in the 9th grade with extra subjects; the smaller girl is in the 10th grade with some supplementary

[1] *University of Iowa Studies in Child Welfare*, Vol. I, No. 1 (1921).

work and musical training; and the larger girl is in the 11th grade with 'A' work in all subjects, but little or no supplementary work. In educational tests the range is smaller."

Several graduate students who have read these and other passages from Baldwin agree with us in interpreting them essentially as follows:

1. Height, weight and development of carpal bones constitute a satisfactory measure of "maturity."[1] (See 2 above.)

2. "Maturity" exerts an influence on mental age, irrespective of chronological age.

3. Physical maturity—based on height, weight and carpal bones—is very closely correlated with social maturity.

4. Physical maturity exerts a powerful influence on scholastic achievement.

5. Physical measurements should be utilized and heavily weighed in determining expectations of achievement, in classification and promotion of school children.

Baldwin's method of classification, presented in the *Yearbook*, a widely circulated and influential organ, will unquestionably be adopted by many schools. That the method should be sound in every respect is of profound importance. We shall test the validity of the underlying assumptions by a historical survey of related studies and by a summary of data secured last year in the Horace Mann School.

II. EVIDENCE NOW AVAILABLE ON THE RELATION OF PHYSICAL AND MENTAL TRAITS

The evidence is too voluminous for detailed description here. The general character of the several investigations made between 1893 and the present date, together with a rough indication of the tests used and results obtained, may be secured from the tabular summary below. Many of these studies are based upon inadequate estimates of mental and scholastic abilities and upon inappropriate statistical analyses, inasmuch as they antedate the period when familiarity with objective tests and the methods of correlation was general.

Porter's study (1893), the earliest listed, represents a type, frequently repeated later, which merits particular criticism. Children of a given age are arranged according to the school grade reached. For these grade groups (in any one of which the pupils were of the same age), the average height, weight, etc., is computed. It was the rather uniform result that the taller and heavier of a given age were, on the whole,

[1] Except for adolescent ages wherein the onset of pubescence is also taken into account.

TABLE I

SUMMARY OF REPRESENTATIVE STUDIES OF THE RELATION OF PHYSICAL AND MENTAL TRAITS

Studies Marked (?) Are Probably Invalid Because of Failure to Control Certain Variables as Explained in the Preceding Pages

INVESTIGATION	DATE	SUBJECTS USED	PHYSICAL TRAITS MEASURED	CRITERIA OF MENTAL OR SCHOLASTIC ABILITY	RESULTS
Porter	1893	School children	Height, weight	School grade reached	Positive correlation (?)
Gilbert	1894	School children	Height, weight, lung capacity, strength of grip	Teachers' estimates of mental ability	Zero correlation
Boas	1897	School children	Height, weight	Teachers' estimates of mental ability	Slightly negative or zero correlation
Binet and Vaschide	1897	French school children	Speed of running, reaction time, speed of tapping, strength	Tests of memory and learning ability	Zero correlation
Smedley	1900	School children	Height, weight, sitting height, lung capacity, strength	School grade reached	Positive correlation (?)
Wissler	1901	Men in Columbia College	Height, weight, strength, speed of tapping, steadiness, etc.	Tests of memory, perception, association, etc	Negative correlation
Bagley	1901	School children	Strength of group, speed of tapping, accuracy and steadiness of motor control	Teachers' estimates of mental ability	Slightly negative correlation
Chamberlain	1901	School children	Height, weight, lung capacity, strength	School grade reached	Small positive correlation (?)
Pearson and Lee	1903	College students	Weight, strength	School marks	Zero correlation
Crampton	1908	School children	Weight, strength, pubescence	School grade reached	Positive correlation (?)
Cornell	1908	School children	School physical record, physical defects	School grade reached	Positive correlation, physical efficiency and grade reached (?)
Rotch	1909	School children	Degree of ossification of wrist bones	Teachers' estimates and grade reached	No detailed data but positive correlation asserted

TABLE I (*Continued*)

Investigation	Date	Subjects Used	Physical Traits Measured	Criteria of Mental or Scholastic Ability	Results
Foster	1910	School children	Age of onset of pubescence	Grade reached	Positive correlation asserted (?)
De Busk	1913	School children	Height-weight index, i.e., height ÷ weight	Binet intelligence test	Small positive correlation
King	1914	School children	Age of pubescence	Grade reached	Positive correlation (?)
Baldwin	1914	School children	Height, weight, lung capacity, strength, etc.	Grade reached	Positive correlation (?)
Wooley and Fisher	1914	Working children	Height, weight, grip, lung capacity steadiness, sensory acuity	Grade reached on leaving school	Positive correlation (?)
Stewart	1916	Elementary and high school boys	Height, weight	School marks	Small positive and zero correlations
Bickersteth	1917	Elementary and high school pupils	Tapping, plunger, test, steadiness of motor control	Tests of memory, perception, association, etc.	Very low positive correlation
Hunt, Lincoln and Johnson	1921	Groups of normal and under-nourished children	Height, weight index	Tests of intelligence, learning tests, performance tests	Zero correlation with intelligence, small positive correlation with learning, zero correlation with performance tests
Naccarati and Lewy-Guinzburg	1922	College students	Ratio, weight to height	Group intelligence tests	Correlations of 0.13, 0.15 and 0.44
Dowd	1922	Normal and under-weight children	Weight-height index	Intelligence tests	No difference between average I.Q.'s of the two groups
Lowell and Woodrow	1922	School children	Ossification of wrist bones, number of teeth	Binet test	Ossi. and I.Q. r's= 0.23, 0.15, 0.41, 0.31. Teeth and I.Q. r's=0.12 and 0.21. Ossi. and teeth, r's=0.22 and 0.29

TABLE I (*Concluded*)

Investigation	Date	Subjects Used	Physical Traits Measured	Criteria of Mental or Scholastic Ability	Results
Baldwin and Stecher	1922	Forty-nine school children, ages 5-15 years	Height, weight, ossification of wrist bones	Binet intelligence test	Height and M.A. age constant=0.53. Wt. and M.A. age constant=—0.15. X-ray and M.A. age constant=0.09
Nicholls	1923	School children	Normal and underweight groups	Various mental and motor tests	Both groups same in mental tests. Normal weight had greater muscular endurance
Stalnaker	1923	College students, school children	Height-weight indices	Intelligence tests, specific mental tests	Correlations positive but rarely above +0.10
Murdock and Sullivan	1923	School children	Weight, height, diameter of head	Intelligence tests	Positive *r*'s from 0.10 to 0.22

scholastically more advanced than the smaller. It has been customary to see in these results evidence that the physically superior children are mentally superior, or that physical superiority results in greater achievement, intelligence being the same. Neither conclusion is justified; the correlation is certainly partly, perhaps wholly, spurious.

Children—we now know beyond reasonable doubt—have been promoted in part on the basis of their size, strength, general physical maturity as well as on the basis of intelligence or scholastic achievement —hence the correlation between physical maturity and grade reached. It is quite the rule to find, within particular grades, 3 to 8, a negative correlation between chronological age and achievement objectively measured. The older ones within a given grade are the bigger, but they are also the duller, on the average. Grade reached, then, is an unsatisfactory criterion. It produces a fictitious appearance of an influence of physical development on scholastic achievement and mental maturity. In the tabular summary of investigations, those subject to this inadequacy are checked in the column under "results" with a (?).

The summary reveals a degree of inconsistency explicable, in part,

by the diversity of criteria, subjects, physical tests and statistical devices utilized. Relatively infrequently has the method of correlation been used with the result that the magnitude of association, positive or negative, may rarely be determined exactly.

The use of grade attained as a criterion of mental and scholastic abilities has resulted in the appearance of positive correlations which are more or less spurious in the studies of Porter, Smedley, Chamberlain, Crampton, Cornell, Foster, King, Baldwin and Wooley and Fisher.

Zero or nearly zero correlations were suggested or demonstrated by Gilbert, Boas, Binet and Vaschide, Pearson and Lee, Hunt, Lincoln and Johnson, Dowd and Nicholls; slightly negative correlations by Wissler and Bagley.

Low or very low positive correlations were obtained in most of the recent and more carefully conducted studies, those of DeBusk, Stewart, Bickersteth, Hunt, Lincoln and Johnson (in part of their study), Naccarati and Lewy—Guinzberg, Lowell and Woodrow, Baldwin and Stecher—except for height and M.A.—Nicholls, Stalnaker, Murdock and Sullivan.

Some of the statements quoted above to the effect that physical status implies so much concerning mental maturity and scholastic achievement, are somewhat surprising in the face of this list of results from representative studies which, as we see them, point unmistakably to very low positive, or nearly zero, correlations. In support of the assertions that "the physiologically more mature child has different attitudes, different interests," etc., "there is a direct relationship between social age and physiological maturity" and "physiological age has a direct bearing on pedagogical age," etc., no evidence is presented either by Baldwin or by any other of the writers whose materials we have examined. Historically, indeed, the evidence, so far as it goes, seems to us to be opposed to Baldwin's recommendations in the *Yearbook*.

III. RESULTS OF AN EXPERIMENT IN HORACE MANN SCHOOL

In most of the preceding studies, too few types of measures of the same pupils have been obtained to provide the material for an analysis of the complex interrelations of physical, mental, educational, emotional and other traits. For this reason, an experiment was designed to test the significance of several representative measures under the actual conditions and in the customary groupings of the Horace Mann

School. As subjects were used the pupils of three classes at Grade 4 level and, to test a pre-school level, approximately sixty pupils of the kindergarten groups.

The following measurements and estimates were secured:

I. Physical Measurements. (1) Total area of ossification of the wrist bones from X-ray photographs, measurements by means of the Planimeter; (2) ratio of area of ossification of wrist bones to total wrist bone area; (3) height, (4) weight, (5) chest girth, (6) lung capacity, (7) strength of forearm, (8) index of nutrition based on Dr. T. H. Wood's tables.

II. Physical Health, Vigor, Stamina and Efficiency estimated by several teachers who used a rating scale prepared for the purpose.

III. Emotional Maturity, as indicated by absence of excessive emotionality, maturity of control, evenness and appropriateness, etc., which were described in a rating scale; estimated by several teachers.

IV. Social Maturity, as indicated by responsibility, coöperativeness, respect for law and order and leadership; estimated.

V. Mental Ability and Maturity.
   (1) Stanford Binet Mental Age.
   (2) Teachers' estimates of mental maturity as indicated by general comprehension, critical responsiveness, responsibility, "common sense" and intellectual curiosity.

VI. Educational Achievement and Maturity.
   (1) For Grade 4, a battery of six tests from the Stanford Achievement tests plus Horace Mann objective tests in language usage and spelling.
   (2) Teachers' estimates of scholastic maturity as indicated by initiative, interest, habits, persistence in school work, fitness for promotion.

The mental tests were given at the beginning of the year, or based on I.Q.'s secured earlier; the physical tests were given early in the year, with the exception of the X-rays of the wrist which were secured near mid-year; the estimates were secured at the end of the year and were based on observations of at least a year; the educational tests were given at the end of the year.

Since the existence of sex differences, at least in physical traits, has been demonstrated, for purposes of comparison and correlation, both groups—the kindergarten and Grade 4—were divided into the two sexes for each of which results were computed separately. Between each pair of variables, therefore, four correlations were obtained. Although the range of life ages was not great (the average deviations being about 0.65 years for the kindergarten and 0.57 for Grade 4) the effect on the correlations was appreciable and was therefore eliminated by partial correlation.

Details will not be presented in this paper, but will be published in full elsewhere.[1] Only those conclusions which appear well substantiated by the evidence will be presented and these in summary.

Our data force us to an apparent disagreement with Baldwin, Rotch, Woodrow, and others concerning the *general* significance, the predictive value, of physical traits. These writers have suggested that certain traits, notably the X-rays of the wrist bones, are indicative of general anatomical, physiological or physical maturity, or of "physical fitness" or of "maturity" in general. Thus, Baldwin recently has written that "there is a high correlation of the development of carpal bones . . . with growth in stature and with other criteria of maturity."[2] Quotations from Rotch and Woodrow are given above.

Our objections are, first, that the correlations among physical measures while always positive and often high are also often low. No single measure is an adequate index of the status in all others. The area of ossification of the wrist bones, for example, while correlating about 0.60 with height and weight, yields lower coefficients, 0.43, 0.31, 0.26 and 0.25, respectively, with chest girth, lung capacity, strength of grip, and an index of nutrition. To secure a measure of general physical status it is necessary to combine several physical measurements.

Second, no single physical measure yields a high correlation with the estimates of physical vigor, stamina, maturity and fitness made by several teachers after a school year of observation of their pupils. The ossification of the carpal bones, for example, yields an average correlation of 0.15 with these estimates; the highest correlation, 0.37, is given by nutrition. When all seven different physical measures are combined by the technique of multiple correlation, the correlation with physical fitness is 0.61. Specialization in the development of physical features is thus indicated again; no single touchstone of physical fitness appears. It may be objected, of course, that the teachers' judgments are inadequate. The fact that the correlations run up steadily as more measures of physical traits are added to the team is some evidence to the contrary, and other evidence will be observed later, particularly the fact that the correlation of the teacher's estimate of physical fitness adds to the correlation with educational achievement, over and above the influence of M.A., not only more than any single physical trait but more than all of them combined.

Third, no physical trait is an adequate index—as other writers imply

[1] Probably in a forthcoming issue of the *Journal of Educational Psychology.*
[2] Baldwin, B. T., in *Twenty-Third Yearbook of the National Society for Study of Education,* Part I, p. 39.

—of such types of maturity as mental, scholastic, social, emotional, or "general" maturity. For example, the X-ray of the carpal bones correlates from .07 to 0.24 with the several ratings. No other single physical trait varies much from the average correlations for all physical measures, which are as follows: with mental age, 0.09; with estimated mental maturity, 0.11; with social maturity, 0.14; with educational maturity, 0.13; with emotional maturity, 0.14; with the sum of all maturity ratings (i.e., "general maturity"), 0.16. Clearly there has been a great over-estimation by many of the general significance of these physical measurements. With no measure of maturity does a single physical trait give a correlation practically serviceable for individual prediction. Furthermore, when all of the physical measures here used are teamed together by multiple correlation, the resulting coefficients are in no case high except with estimated physical fitness. All physical traits combined with weightings to yield the highest possible correlation, yield with mental age 0.21, and with social maturity 0.37, which was the highest obtained.

Fourth, maturities, as we have appraised them, are not everywhere one and the same. Growth is specialized and has many phases. In so far as physical status, mental age, educational age, and estimated mental, physical, social, scholastic and emotional maturities, as here secured, represent phases or types of growth, the conclusion apparent is that growth is not everywhere uniform and single but varied and, in different degrees, independent. In our groups there is little association between mental and physical growth, or between social or emotional maturity and educational age. Among some of the estimated maturities, the correlations are relatively high, due in part to the familiar tendency of human judges to fall into errors (the "halo" influence) which produces correlations that are spuriously high. When reasonable allowances for these influences are made, the disparity among the various maturities or growths which appear to exist in nature is strongly suggested.

Classification, then, in terms of maturity offers this difficulty: The several varieties, while intercorrelated variously, are nevertheless far from identical. Arrange the group according to one and there is left a wide range in others.

The problem of classifying pupils can scarcely be adequately discussed until the objectives have been determined. Is it the object to group together those that are alike in mental age, mental maturity, physical development, social, scholastic, or emotional maturity or what? Since students of the subject will disagree on these matters, it

will be advisable to take up the problem from definite but different points of view, attempting to ascertain what measures or estimates will best enable us to gather together those most alike in some respect. First, let us consider the problem from the point of view of predicting educational achievement on the assumption that our purpose, for the moment, is to get together pupils whose prospects of advancement in these respects are similar.

The problem of classification of pupils, once mainly solved on the basis of demonstrated or estimated achievement, is now more difficult inasmuch as *expectation* of progress is the more prominent consideration. It is now considered not enough to group together children who are scholastically alike at the moment; those should be put together who will advance similarly. It is necessary, therefore, that means of predicting probable achievement be secured. The degree to which the several variables will enable us to increase the accuracy of our prediction of achievement becomes the matter of prime import.

Of all the tests or estimates used in this study, the Stanford-Binet Mental Age gave the best prediction of achievement. Although all of these tests were given at the beginning of the year, or at the beginning of the preceding year, the final attainments in May were foretold with an accuracy indicated by an uncorrected correlation of .595. Except for the teachers' judgments of mental maturity (made at the end of the year and doubtless influenced by knowledge of test results), no other variable approaches this prediction. The physical measurements given at the beginning of the year gave correlations as follows: Height .01, weight .07, chest girth .03, lung capacity .00, grip .15, nutrition .15. The measures of ossification of the wrist bones, secured at midyear, gave for total area .02, and percentage of ossification 0.16. All of these correlations are undoubtedly so small as to be of no appreciable value. Achievement is correlated with physical efficiency during the year, estimated at the end, .38; with social maturity .19; with emotional maturity .20.

How great the specific influences of these variables may be is disclosed by the multiple correlations obtained when one or more variables are added to M.A. to give the highest obtainable correlation with achievement as compared to the coefficient which M.A. alone yields. When all of the physical measures are teamed with M.A. the coefficient with achievement is 0.626, an almost insensible rise above the 0.595 given by M.A. alone.

Better than the team of physical measurements is the teacher's

estimate of physical fitness, vigor and stamina. Whereas the team of physical measurements increases the coefficient from 0.595, that given by M.A. alone, to 0.626, the addition of estimated physical fitness pushes the coefficient to 0.653. This figure is higher than those produced by adding singly social or emotional maturity and the same as that given by adding the teachers' estimates of mental maturity. When M.A., estimated physical fitness and mental maturity are all combined, the correlation with achievement becomes 0.67. This was the highest multiple correlation secured except those which included the teacher's estimate of educational maturity. Adding educational maturity is, however, barely legitimate since the teachers, knowing fairly well their pupils' accomplishment, may have been more or less influenced by it in their judgments. The result is thus, in a measure, a spurious self-correlation.

It may be urged that even if a measurement of mental ability, slightly qualified by considerations of physical status, and fitness and mental maturity, yields the best available means of prediction, it might still be undesirable. While the physically inferior may, or even do, accomplish essentially as much as those of similar mentality but superior in weight, size and other physical traits, they should not, perhaps in the interest of health or physical growth, be required or allowed to do so. This consideration lies outside the scope of this study; no data are available on it. It is plainly a problem worthy of careful investigation. *A priori* there is a defense for an opposing point of view, namely, that health and growth are both benefited not by idleness or by work on materials below the level of one's powers but by absorption in tasks which are adjusted as closely as may be to one's ability. For this assumption there is, moreover, considerable evidence, both from observations of school children and from observations of adults by physicians and others. We have not as yet been presented with evidence that acceleration on the basis of mental ability alone does any harm to health, happiness, growth or efficiency; nor have we seen any satisfactory evidence that grading mainly on the basis of physiological maturity yields beneficial results in these respects.

Even if it is urged that equality in capacity for scholastic achievement is not the only criterion for classification or promotion of pupils, but that similarity in physiological maturity, in physical strength, athletic abilities, motor abilities, social aptitude, inclinations or maturity, emotional propensities and maturity, and other human traits, is also desirable, it becomes none the less essential that similarity in

strictly scholastic possibilities be maintained; this problem can by no maneuvering be brushed aside. The other criteria of classification, however, do merit consideration.

We should consider ways and means of selecting pupils alike in physique, in social, moral, emotional and other traits. Our data, so far as they go, demonstrate this fact: We do not secure groups uniform in the social, emotional, mental or scholastic traits by grouping them on a basis of physical measurements. Whether we would get pupils alike even in motor facility and aptitude, in athletic prowess, was not determined. In general, it was found that these several divisions of traits were far from perfectly correlated. Each must be measured by itself and not estimated from something else. Thus, social maturity is correlated with ossified area, 0.13; with ossified ratio, 0.20; with height, 0.15; with weight, 0.17; with all physical traits combined, 0.37; with M.A., 0.26; with educational achievement, 0.19; and with estimated educational maturity, 0.43; with mental 0.69, emotional 0.66, and physical fitness 0.66. When allowances are made for the constant error (halo effect) of judgments which produces correlations with social maturity, itself estimated, which are too high, it appears probable that no grouping will give a compact distribution in all of these traits.

No one, we trust, will accuse the writers of having said that "physical measurements are of little value, barely worth the trouble." This is not implied. These measurements are highly to be desired for their own sake, for appraising physical growth, regulating diet, exercise, for correcting defects, suggesting susceptibilities, and other uses, but not for the purposes of classifying children intellectually, scholastically, socially or emotionally, at least, as these traits were appraised in the Horace Mann School.

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NEW STUDIES IN EDUCATION

THE ISOLATION OF VITAMIN D

TESTS FOR VOCATIONAL GUIDANCE OF CHILDREN THIRTEEN TO SIXTEEN

A CONDUCT CURRICULUM FOR THE KINDERGARTEN AND FIRST GRADE

THE ISOLATION OF VITAMIN D

On March 19 Professor Walter H. Eddy, of Teachers College, was able to report to the Society of Experimental Biology and Medicine the isolation of a pure crystalline product which has the properties ascribed by Funk to Vitamin "D." The knowledge of the presence of this vitamin in certain materials dates back to the yeast growth studies of Wildier who in "La Cellule" in that year stated that the growth of these plant cells required the stimulus of something present in plant extracts to which he gave the provisional name of "bios." Bottomley in England later reported the discovery of similar stimulatory organic extracts and used the name "auximones" to designate the effective factor. None of the investigators actually isolated or identified the stimulatory factor, but sufficient study has been made of the effects of extracts to indicate definitely its properties so far as physiological action is concerned.

In 1916 Roger Williams carried out a series of studies in the course of which he used water extracts of a large number of substances known to be rich in vitamin B. He also included extracts of other substances notably deficient in B. When such extracts were added to yeast culture media he found that the extracts rich in B were able to stimulate yeast growth and the extracts poor in B failed to do so. These experiments convinced Williams that "bios" and vitamin B were one and the same substance. On the strength of this conviction Williams proposed a test for vitamin B content of foodstuffs which utilized the measure of yeast growth on extracts of these foodstuffs as the gauge. Further

study of his test, however, showed that it was not accurate. To take one example from the work of one laboratory, Professor Eddy, Miss Stevenson, and Dr. Heft were able to show in a group of investigations published in 1921 that when this test was applied to a group of materials that Osborne and Mendel had already tested for vitamin B by the rat growth test the agreement was only partially true. Spinach, for example, was found highly stimulative to yeast growth and far from rich in vitamin B as measured by rat growth or curative tests on pigeon beri-beri. Other investigators obtained similar discordances. The sum total of these findings was to suggest that the substances which cure beri-beri, promote rat growth and stimulate yeast growth are not identical, and yet in general the yeast growth is most abundant in the substances that are rich in vitamin B. In 1922 Casimir Funk was able to show that when an extract containing vitamin B was shaken with Fuller's earth the earth adsorbed from the extract all its power to prevent beri-beri, but that the filtrate from this extract was still a good stimulant to yeast growth. This experiment convinced him that such extracts really contain at least two vitamins. For one, the curative factor for beri-beri, removable by Fuller's earth, he suggested the retention of the name "B" and for the yeast growth factor the term "D."

This suggestion originated still another controversy. In this phase Fulmer, Nelson and Sherwood of Iowa and McCollum, De Souza, and Margaret MacDonald of Johns Hopkins have taken an active part. These investigators believe that they have shown that yeast plants can grow for a long period on a medium in which no vitamin D or "bios" is present. The addition of vitamin D extracts to such media admittedly stimulates growth, but since the yeast can grow without it they hold that this factor should not be listed as a vitamin but should retain the name given by Wildier, i.e., "bios."

These explanations are necessary if we are to understand the scientific attitude toward the yeast growth stimulator. Obviously, the controversy over nomenclature will adjust itself as our knowledge increases, and that knowledge is greatly extended by the success of these investigators in isolating what is believed to be chemically pure "bios."

When the United States Army Laboratories were set up in the Philippines after the Spanish War, Dr. R. R. Williams (older brother of the Roger Williams mentioned above) was one of the chemists employed. He was there during the studies of beri-beri which led up to the announcement by Funk in 1911 of the isolation of the curative factor. Funk called this substance Vitamine and it was later re-

christened Vitamin B. Funk's material later proved to be not the pure vitamin. Dr. Williams on his return to the United States became a worker on the staff of the U. S. Bureau of Chemistry. Retaining his interest in the problem, he has contributed several interesting papers to the classical literature of the subject, both under his own name and in collaboration with Atherton Seidell. In 1919 Dr. Williams became the director of the chemical laboratories of the Western Electric Company in New York City. Continuing an earlier acquaintance and common interest in the subject, Dr. Williams collaborated with Professor Eddy in their search for the vitamins. A few months ago they secured the coöperation of Dr. Ralph Kerr, who has recently received his doctorate in Organic Chemistry from Columbia University. In working out certain leads suggested by Professor Eddy and Dr. Williams in the Teachers College laboratory, Dr. Kerr suggested certain modifications. One of these modifications proved exceedingly propitious and about a month ago they succeeded with its utilization in obtaining the pure bios. To quote Professor Eddy, "The outcome is therefore a joint result where three heads proved better than one!"

In answer to the question, "How do you know that you have pure bios or vitamin D?" Dr. Eddy states: "First our product is a crystalline substance which melts sharply at 223° Centigrade (about 423° Fahrenheit). This in itself suggests purity. The crystals on successive recrystallization retained their melting point and appearance. But we did not consider this evidence sufficient and samples were submitted to the mineralogists who put it under polarized light and tested also its index of refraction. They certified that in so far as they could judge the product was homogeneous and chemically pure. The question then was as to whether our product was 'bios.' For this purpose we used the yeast test. We proved that .005 milligrams of the crystals (about one five millionth of an ounce) per cubic centimeter of culture medium would increase yeast growth twenty times. Evidently our product is highly potent and manifests the properties of bios. This similarity to the hypothetical bios has now been demonstrated many times. Furthermore, we have been able to reproduce our extraction method five separate times to date and always with the same result. Such evidence seems conclusive that our product is a pure substance possessing the growth powers of 'bios.'

"It is too early yet to describe in detail its properties. The yield is only about $\frac{1}{400}$ of an ounce from six pounds of brewer's yeast and

the process takes some time to carry through. Hence much that we wish to learn about it awaits larger production. Its composition and molecular weight are now however established, and the apparent formula is $C_5H_{11}NO_8$. The daily press has seized upon the discovery as a news event and in describing it has emphasized both what it may mean and what each reporter hopes it means. That is only natural but somewhat disconcerting. We have hopes that the method used in its isolation may lead the way to the separation of the other vitamins, especially those more important to human nutrition. We hope to help solve the problem of how a vitamin functions in the animal body by use of this substance. We do not expect or desire to use it to develop synthetic diets or manufacture pills. We certainly never wish to eat a synthetic diet ourselves and would consider it almost a crime to force such a thing upon the public. Fortunately there is nothing about the discovery that even remotely suggests this outcome. We do hope, however, to advance the scientific study of nutrition."

TESTS FOR VOCATIONAL GUIDANCE OF CHILDREN THIRTEEN TO SIXTEEN *

The problem of vocational guidance of children resolves into the question: "What tests can the average grade school teacher, relatively unsupervised, give, each of which measures an important part of a child's nature that is unmeasured, in so far as possible, by the other tests of the series?" From a consideration of the ages at which children leave school to enter occupations, it follows that vocational guidance is a function of the elementary school, and that the optimum vocational guidance ages are the ages thirteen to sixteen.

All vocational guidance ultimately resolves itself into a question of educational guidance. This will be more apparent if we consider that immediately upon choice of an occupation, the next question which enters a youth's mind is, "Where can I most economically get the most desirable training for the occupation?"

It is then evident that some measure of a youth's capacity to profit by further academic instruction is a fundamental part of a vocational guidance program. Such a test should have a minimum susceptibility to improvement through practice or coaching; it should give substantially the same rating on successive occasions; and it should have a high relationship to future academic success. It has been found that

* Teachers College, Columbia University, Contributions to Education, No. 136. By Herbert A. Toops, Ph.D., with the assistance of the Staff of the Division of Psychology, Institute of Educational Research, Teachers College.

a combination of a reading and an arithmetic test meets these specifications adequately. Other investigations of academic proficiency show that it is a fairly stable component of human nature; in general, the pupil who has done well during the first six years or so of elementary work does not suddenly drop to the foot of the class nor *vice versa*. It would appear that school marks and school records in the grade school, if objectively determined, may have very great value for predicting success in high school.

An investigation of the distribution of I.Q.'s of high school students by years shows that the high school group is restricted almost entirely to the upper half of the intelligence of our adult population as measured by Army Alpha, and that there is a progressive elimination of the duller pupils throughout the high school course. Unless a child has a mental age of over 14, or an I.Q. of over 100, his chances of graduating from a high school are very slight,—scarcely one chance in five.

Of the available mechanical tests for boys, the Stenquist Mechanical Assembly Test proves to be the most feasible on all counts. It measures a capacity of boys which is relatively independent of intellectual ability. Such a test allows us to salvage vocationally those pupils destined to be failures if they attempt further academic work, but who are endowed or may be fitted by training to achieve a successful career in some skilled mechanical occupation where manipulation of things rather than ideas is the prime requisite for success. Our results confirm the results of Stenquist in this regard.

It is important, for the present at least, for test workers to attempt to discover objectively measurable and vocationally significant traits which, like the general mechanical ability measured by this test, correlate low with the present intelligence tests. The salvaging of potential high school failures is one desirable goal for vocational guidance.

A manipulatory mechanical test, containing eleven tasks, has been constructed to fill the need for such a test for girls. The tasks have been so chosen that all require the copying of a model and deal with materials familiar to girls. Girls of a given age do much more poorly on the boys' assembly test than do boys of the same age. Nevertheless, boys of the same age do apparently but little worse than the girls on the girls' tests. Over three hundred girls have been tested on both the boys' and girls' tests, while about 1500 have been tested on the girls' test. Their careers will be followed.

Two clerical tests, a more verbal and a less verbal one, have been developed in an attempt to obtain a clerical scale which will differen-

tiate between intelligence and clerical ability in the same way as the mechanical tests do between mechanical ability and intelligence. The attempt has been only partially successful. Extremely low scores on either an intelligence test or on either of the clerical tests which have been devised would seem to indicate probable failure in clerical work. Either test is a valuable addition to a battery of tests for vocational guidance purposes.

The results of application of tests to certain groups of industrial workers show in some cases that the tests used would be important additions to the employment manager's equipment, while in others the results are baffling. All these investigations make apparent the great need for more adequate measures of proficiency or of success on the job, for it is against such a criterion of industrial proficiency that we are always required to measure the effectiveness of the tests.

This study, which is summarized briefly in the foregoing paragraphs, is a part of the official report of the Institute of Educational Research of Teachers College. The follow-up investigations, now going forward in the third year, it is hoped may be carried on through several years.

A CONDUCT CURRICULUM FOR THE KINDERGARTEN AND FIRST GRADE

The newest venture in the field of early education is "A Conduct Curriculum for Kindergarten and First Grade," * issued in December by the department of Kindergarten-First Grade Education of Teachers College. This is Professor Hill's conception of a curriculum for the education of the child from two to seven. There have been various types of curricula for the kindergarten, beginning with the formal "program" which showed exactly how to use each piece of material and what subject matter to introduce each week or month of the year. More recently there have been "project" curricula which have made use of the child's own purposes, but which still have tended to emphasize subject matter. A "conduct curriculum" is one which considers *the effect of experiences on the child's behavior, and so on his character,* and which shows how each activity and experience of the school day may be educative. It answers the question often asked by visitors in kindergartens where informal work is being carried on: "When is work going to begin?" Education—or rather that part of it

* *A Conduct Curriculum for Kindergarten and First Grade.* Directed by Patty Smith Hill and compiled by teachers in the Horace Mann School. Published by Charles Scribner's Sons, New York.

with which the *teacher* is directly concerned—begins the moment the child enters the school building and goes on during the entire time he is in school. For this reason space is given in the new curriculum to activities not hitherto considered as separate divisions of a school curriculum—"Arrival at school," "Lunch," "Excursions," and so on.

Within the last ten years the viewpoint with regard to the education of the child from two to seven has changed materially. In the first place the importance of this period for habit formation has come fully to be realized. In the second place there is a growing recognition of the fact that there should be no break in the education of these years—growth should be continuous. The important part of the child's first school experience is not the information he gains but the social adjustments he makes, the changes that come about in the child himself—the growth of ideals, the formation of desirable habits, the setting up of certain attitudes. It seems almost incredible that teachers of young children have considered *subject matter* to such an extent that there is an actual division in the field of kindergarten education, a division that has arisen through differences of opinion with regard to the subject matter and materials to be used in the kindergarten, and the method of using them.

In the experiment carried on in the Horace Mann kindergarten and in the first grade directly under Professor Hill's supervision, emphasis has not been on subject matter, materials, and methods of presentation. All of these have been subordinated to the study of the child and what he should gain from this new environment in which he is placed. Materials are tried out and accepted as they prove their value for helping the child to grow and teaching him to think; subject matter is that which grows out of the social situation and is vital to the child. When the child plays with blocks he may learn certain things about the shape of the blocks and how to build with them, but these are not the things that count most in his education. The things that *do* count are the social adaptations he makes as he builds with other children, the thinking he does as he plans his building, the habits of work he forms, the physical development he gets from handling blocks.

The committee which compiled the conduct curriculum—teachers in the Horace Mann kindergarten and first grade—began work with two definite ideas in mind:

1. The curriculum must be one which the teacher of average ability and training can use. It must be practical and clear, not obscured by educational phraseology.

2. The closest connection possible must be kept between the children's activities and the effect of these activities on the children themselves. There was already in existence "A Tentative Inventory of Habits," the work of compiling which had been directed by Dr. Agnes Rogers in coöperation with members of the Kindergarten-First Grade staff. This was a list of the desirable habits which might be formed in kindergarten and first grade. The work of the committee was to take the next step and to place habits in the social situations in which they should be learned. In order to do this it was necessary to consider each period of the school day in relation to the behavior of the children, no experience or activity being too unimportant to be analyzed in this way.

The first part of the curriculum presents the general theory of the work, with statements as to organization, and standards for judging the value of activities. The second part is a detailed analysis of activities with the activities listed in one column and their outcomes in another. The number of educational possibilities presented by some activities is astonishing. The simple situation "Going on an excursion" proves to be the means of learning how to conduct oneself when going through college halls, how to behave in the street, how to cross streets carefully, how to look at things intelligently. In addition there are the desirable changes in thought, feeling, and conduct connected with specific excursions, a few examples of which may be given here:

Activities	Desirable Changes in Thought, Feeling, and Conduct
Excursion.	
Library	Feeling of wonder at many books.
Looking at rooms full of books.	Learning how to conduct self in library (walk quietly, refrain from conversation).
Noticing arrangement of bookshelves.	
Observing people reading quietly.	
Chapel	Gaining attitude and habits of reverence.
Going quietly into chapel.	Learning how to behave in church (sit quietly, refrain from conversation).
Sitting in seats.	Gaining idea of how church looks.
Listening to organ.	
Looking at windows, organ, etc.	
Furnace Room	Learning to keep back from fire.
Looking at coal piles.	Learning to keep off tracks.
Seeing coal brought to furnace in small cars on tracks.	Enjoying beautiful color of fire.
Watching men put coal on fire.	Learning how fireman puts on coal (in front first to modify heat).
Watching men remove ashes.	Learning how coal turns into ashes.
Feeling intense heat.	Beginning of interest in coal and where it comes from.
	Appreciation of fireman's work.

An interesting point was the number and variety of profitable excursions which were found to be possible within the College and its immediate environment.

Naturally the question which arises with regard to this new type of curriculum is, "Does it work? Do the changes in behavior really take place, or do they exist only on paper and in theory?" The answer to this is that the curriculum is not a theoretical one; it is based on actual experience and is in actual use. An experiment in "checking up" on the curriculum was carried out by the 1923 summer session class in kindergarten-first grade supervision. As a result of their observations of children in the Horace Mann kindergarten and first grade, and of detailed reports on these observations, the class decided that there was marked improvement in the behavior of the children studied, even in the short period of five weeks during which they were in school.

While the conception of education set forth in this curriculum is applied directly to kindergarten and first grade, there is no reason why it should not be applied to *all* education, and adapted by those who are interested in the education of older children. The plan is intended to be suggestive only, to interest the teacher in the educational possibilities of this type of work. The activities listed are those which have occurred in *a particular situation* and which have proved their worth to *a particular group of teachers*. The curriculum is in no way static or limited and new activities are constantly being introduced by teachers and children. The individual teacher should keep an open mind with regard to the activities that are most desirable, should analyze her own situation and accept the contributions of her own group of children. Those especially interested in reading in the first grade will find ample provision made for reading. There is no break in experience between the kindergarten and first grade, the experiences begun in the kindergarten are carried through, with the addition of new experiences such as reading, writing and an added amount of informal number work. There are, however, no formal statements of the required amount of reading or writing to be covered in a year.

Should this view of education as "desirable changes in thought, feeling, and conduct" come to be recognized generally, it is possible that it may do much to remove the artificial barriers now existing between the two types of kindergarten, and between kindergarten and first grade—for technical differences of opinion should then give place to a larger interest in the possibilities of these early years for the formation of character.

COLLEGE NEWS

TRUSTEES

At the meeting of the Board of Trustees of Teachers College on Thursday, April 10, the following action was taken:

Edwin C. Broome, Ph.D., Superintendent of Schools of Philadelphia, was elected Alumni Trustee to serve during the ensuing two years.

The following appointments were made to the Faculties of Teachers College from and after July 1, 1924:

School of Education:

Richard Thomas Alexander, Ph.D., Professor of Education.

Forest C. Ensign, Ph.D., (University of Iowa), Visiting Professor of Education. (Spring Session.)

Fletcher Harper Swift, Ph.D., (University of Minnesota), Visiting Professor of Education.

School of Practial Arts:

Carleton J. Lynde, Ph.D., Professor of Physics.

The assignment of Mrs. Lois C. Mossman, Assistant Professor of Education, was transferred from the Faculty of Practical Arts to the Faculty of Education.

The Trustees established in the Library of Teachers College a Collection to be known as the "Baldwin Collection," in recognition of the long years of devoted service given by Miss Elizabeth G. Baldwin "not only as efficient Librarian but also as generous friend and adviser of students and officers of Teachers College."

Beginning September 1, 1924, the Division of Educational Psychology of the Institute of Educational Research of Teachers College will conduct, at the request of the Institute of Social and Religious Research, an inquiry into character education with particular reference to religious education. Professor Hugh Hartshorne, of the University of Southern California, and Professor Mark A. May, of Syracuse University, have been appointed Research Associates in the Institute to have charge of this investigation.

A TWO-YEAR PROFESSIONAL COURSE FOR SUPERINTENDENTS OF SCHOOLS

The group responsible for courses in educational administration for superintendents of schools at Teachers College has proposed a reorganization of these courses on a two-year basis and their recommendation has been adopted by the Committee on Higher Degrees.

The course proposed will require twelve points in each of the two years devoted to the specialized professional courses for superintendents of schools. At the end of this period a diploma for superintendent of schools will be granted to those who have satisfactorily completed their university work and who have established their competence through experience in the field. For men who have had little administrative experience, it is proposed to provide one or more years comparable to the interneship of the men who have received their degree in medicine in the more progressive schools.

State and city superintendents of schools who have been approached have indicated their willingness to assign such men to their headquarters staff, and to pay them a salary sufficient to

maintain them during this period of further training. These men will receive the diploma of superintendent of schools after completing satisfactorily their apprenticeship.

The specialized professional courses for superintendents of schools in the new plan will be developed on a job analysis problem basis. Considerable progress has been made in the development of these problems for the training of superintendents of schools during the past three or four years. It is proposed to present only problems which really occur and which superintendents of schools have had to meet. When these problems have been satisfactorily developed they will be printed and made available not only for students in Teachers College, but for those studying educational administration in other institutions.

It is proposed that the first year's professional course deal with those problems which occur most frequently in the experience of every executive, and that the second year's course deal with more highly specialized problems in these fields, or in entirely new fields.

Men who show unusual ability to undertake research, and who desire to begin their work for the doctor's degree during the second year, will be permitted to specialize in some one field while they continue to attend the meetings of the second year group and to participate in the discussion of all of the problems treated during the second year.

The staff responsible for the development of this work believes that the first year's work will be worth as much as or more than the first year as now organized. Students will not be so crowded with a multiplicity of problems as is the case where an attempt is made to cover the whole field during a single year. It is hoped that the attitude of mind and method of attack upon administrative problems which are developed will produce a higher degree of professional skill than could come from the more inclusive treatment of a larger number of problems.

A considerable part of the time of the staff responsible for the courses for superintendents of schools will have to be devoted to the analysis of the work of the superintendent, and to the preparation and statement of the problems which these professional workers have had to meet. It is believed that the two-year course on the new basis will provide a type of training which will place the school executive on a par with other professional workers.

EDUCATIONAL ADMINISTRATION

During the meeting of the Department of Superintendence of the National Education Association in Chicago, February 25 to February 29, Dr. George D. Strayer delivered the following addresses: On Tuesday evening, a radio address on "The Rising Tide of Public Sentiment for the Education Bill." This was broadcasted by the *Chicago Daily News*. On Wednesday evening, an address before the American Educational Press Association on "The Results of the Educational Finance Inquiry." On Thursday afternoon, an address before the National Association of Secondary School Principals, on "How Are We to Finance Public Education?" On the same afternoon, an address before the general session of the N.E.A. on "Recent Achievements and Next Forward Steps in American Education—What Shall Be the Nation's Part."

Dr. Strayer spoke before the Southeastern Division of the North Dakota Education Association, April 10 and 11, on the subjects of finance, the national program for education, and "Teaching for Appreciation."

During the recent Department of Superintendence meeting of the N.E.A. Dr. N. L. Engelhardt addressed the Round Table for Superintendents from Cities Having a Population Between 5,000 and 10,000. His topic was "Next Forward Steps in Educational Administration."

The Committee on Nomenclature of

the N.E.A., of which Dr. J. R. McGaughy is a member, met for a breakfast and business session on Wednesday morning at the Auditorium Hotel during the meeting of the Department of Superintendence. Dr. W. W. Theisen and Dr. McGaughy were appointed a special sub-committee to supervise a study of nomenclature in the field of school finances. This study will be carried out by the Research Division of the N.E.A.

An article on "Who Shall Determine the Amount of the City School Budget" by Dr. McGaughy appears in the April number of the *American City* magazine. It is a discussion of the problem of fiscal independence of boards of education in American cities.

Dr. Carter Alexander has been appointed as research associate on the staff of the Division of Field Studies of the Institute of Educational Research.

Mr. Paul Mort has been appointed to the position of assistant professor in the department of educational administration.

The Report of the Survey of the Public School System of Springfield, Mass., School Year 1923-1924, made by the Division of Field Studies, Institute of Educational Research, has been published by the Springfield Board of Education. Copies of the report may be secured direct from the Board of Education.

The dissertation of Dr. Homer E. Cooper has just come from the press of Warwick & York, Baltimore, Md. The title of the dissertation is *The Cost of Training Teachers: A Method of Determining Cost and Its Application in the State of New York.*

The Educational Finance Inquiry has recently published the following dissertations: *Elementary School Costs in the State of New York,* by Dr. R. O. Stoops; *The Fiscal Administration of City School Systems,* by Dr. J. R. McGaughy; *The Cost of Secondary Education in the State of New York,* by Dr. Charles W. Hunt. Copies may be secured from The Macmillan Company.

The March meeting of the Administration Club, held as usual at the home of Dr. Strayer, was one of the most interesting of the entire year. The vice-president of the club, Mr. I. M. Allen, took the rôle of chairman of the Committee on Education of the Rhode Island Senate, selected four other club members as associate senators and held a pseudo-hearing of the bill to reorganize the board of education for the city of Providence, which bill was then actually before the Rhode Island lawmakers. Members of the club pleaded for and against the bill to this Senate committee, taking rôles as representatives of various civic and state organizations of Rhode Island. The strongest plea for the measure was, of course, made by Dr. Strayer who had virtually drawn up the document as a part of the school survey then being conducted in Providence. Mr. Allen and his associate senators finally seemed persuaded of the bill's merit, whereupon the meeting turned to the order of refreshments and the final period of singing which ended as always with the club's adopted song, "America the Beautiful."

ELEMENTARY EDUCATION

Professor Frank M. McMurry addressed a group of principals in Newark, N. J., on March 22.

Professor Frederick G. Bonser is making a survey of the school at the Jewish Center in New York City. This school was started four years ago under the direction of Mrs. Marietta Johnson of Fairhope, Ala.

On March 13 Professor Bonser spoke before the Home Economics Association of Philadelphia on "Current Problems in Home Economics." On Monday, March 31, Professor Bonser held a conference with the principals and supervisors of Baltimore, Maryland, on their new courses of study in geography and history. This was followed by a lecture to the teachers of Baltimore upon

methods of using the new courses of study.

Professor M. B. Hillegas represented the elementary education department in the school survey conducted by the administration department in Providence, R. I. He was concerned mainly with the relationship between the supervisors and principals in the elementary schools. Miss Roxanna Steele, Miss Mary Davis, and Mr. Herbert B. Bruner assisted Professor Hillegas in this work.

During the early part of March Professor Hillegas spoke on the subject of training children to study at four meetings organized by the Philadelphia Teachers' Association.

Dr. Lois Coffey Mossman, instructor in practical arts education, has been appointed assistant professor of education.

On Wednesday evening, March 5, the Elementary Club entertained the Secondary Club. Professor McMurry and Professor Briggs made short addresses, and an interesting musical program made the evening an enjoyable one. Later refreshments were served followed by dancing.

ECONOMIC SCIENCE

Dr. Emma A. Winslow, Summer Session lecturer in household economics, has prepared for immediate publication a college text on *Measuring Living Costs and Standards*. This book represents the results of Dr. Winslow's studies and practical experience in this field, extending over a number of years, including two years of research work for her doctorate under Dr. A. L. Bowley, at the London School of Economics, University of London. Dr. Winslow has also recently received the $800 prize offered by the J. Walter Thompson Advertising Company for "A Statistical Index of Consumer Purchasing Power."

FINE ARTS

At the beginning of the year, Miss Sallie B. Tannahill completed a series of lectures upon "Lettering" and "Dark and Light in Painting." They were given under the auspices of the Teachers Associations, at Detroit, Grand Rapids, and Toledo, and at Skidmore College, Saratoga Springs, N. Y.

On March 14, Miss Tannahill lectured upon "The Value of Art in the Schools" before the teachers of Harrisburg, Pa. She also made a survey of the art work in the schools there.

During March Mr. Albert W. Heckman gave two lectures before The Keramic Society of Greater New York at The American Museum of Natural History, two before the Newark Society of Keramic Arts at the Museum of Fine Arts, Newark, N. J., and one before The Contemporary Club of Newark. All of the lectures were on color and its relation to everyday life.

It is by such means that the fine arts staff hopes to disseminate still more widely the vital theories of the late Professor Dow, and to hand on his teaching unimpaired.

In November last Miss Tannahill's book *Ps and Qs, A Handbook on Letter Arrangement*, was published by Doubleday, Page and Company. It is attractively put together and profusely illustrated in black and red. The problem of artistic lettering has been attacked by Miss Tannahill in a spirited manner that is provocative of thought and stimulating to the creative faculties. Moreover the fine selection of examples and the æsthetic theories advanced are nicely balanced by their sane and practical application to everyday problems in teaching. The press notices have been unanimous in their commendations.

Four of the eight prizes given by The Art Alliance of America at their recent annual competition for textile designs were awarded to Teachers College students.

Miss Petar Mearns carried off the first prize of two hundred dollars for one of her designs for a decorative silk and twenty-five dollars for another made for a printed cotton. Miss Ellen Palmer won a fifty-dollar prize for a design for a silk lining print.

A number of honorable mentions were awarded to Mr. Isami Doi, Miss Lois Murphy, Mr. John Begg, Miss Johanna Beuret, Miss Petar Mearns, all of this year's class, and to Miss Alice Hurd and Miss Marguerite Hanson, also prize winners and former Teachers College students who are now professional textile designers. All of the designs were the work of Mr. Heckman's class in Design in the Art Industry.

The judges who selected the prize winning designs were Mr. Budd of Cheney Brothers, Mr. Hanson of Mallinson's, Mr. Gaddebush of Schumaker and Co., and other representatives of our leading textile firms.

Natural History, the official monthly magazine of The American Museum of Natural History will print in the near future an article on "The Museum and the Designer," by Mr. Heckman. Among the illustrations accompanying the article are a number of hand-blocked linens, wall tile and other designs, made in last year's evening class in Art Structure.

FOODS AND COOKERY

On March 3, Professor May B. Van Arsdale and Miss Millicent Yackey, at the invitation of Miss Martha Westfall, director of home-making in the New York City Public Schools, spoke before an audience of teachers of home-making in Public School No. 59.

On March 18, Professor Van Arsdale spoke at Hood College, Frederick, Maryland. Her topic was "Scientific Training for the Art of Living." Several alumni of Teachers College are on the staff of Hood College.

Miss Day Monroe and Miss Dorothy E. Shank are carrying on a piece of research in coöperation with Mrs. Ellen Beers McGowan for the Associated Manufacturers of Enameled Ware.

Several expert demonstrators from outside the College have appeared before demonstration classes this semester, among them being the Comtesse Alice de la Ruelle of France; Miss Alice Bradley, principal of Miss Farmer's School of Cookery; Mr. Edouard Panchard, vice-president of the Hotel Majestic; Mr. Joseph Paur, supervisor of Statler Hotel bakeries; Mrs. Evelene Spencer, of the United States Bureau of Fisheries, Department of Agriculture.

Among the lectures given by Miss Anna Barrows during the past few months was a series of demonstration lectures before the State Home Demonstration Agents of Alabama, at their annual conference. This was held at the Alabama Polytechnic Institute, under the direction of Miss Agnes Harris, and her force of state specialists. Other courses of demonstration lectures by Miss Barrows were given before the Woman's Club of Concord, New Hampshire, and before the Institute of Arts and Sciences of Columbia University, New York City, four in Concord and four at Columbia.

Miss Margaret D. Graham, assisting scholar in foods and cookery during 1923-24, died after a lingering illness in Lincoln, Nebraska, on January 29. Miss Graham received her Bachelor of Science degree in June, 1923, but her rapidly progressing illness prevented her attendance at the Commencement exercises. She left New York in August full of courage and with the hope that a cure could be effected, but she never rallied.

HORACE MANN SCHOOL

An interesting and valuable activity of the Parents Association has been the publication of *The Bulletin,* which furnishes patrons of the school a list of the important concerts and lectures which are likely to be of interest, as well as the plays and motion pictures most suitable for pupils of the school. This is an interesting attempt on the part of the Parents Association to keep its members informed as to the worthwhile activities of the community.

Miss Belle Boas, instructor in fine arts, recently spoke before the School of Industrial Arts of the Pennsylvania Museum in Philadelphia on "Methods of Teaching the Fine Arts." Miss Boas

also spoke before the Parents Association of the Horace Mann School on March 12 on "Aims and Ideals of Fine Arts Instruction in the Horace Mann School."

Mr. Roy W. Hatch, instructor in history and citizenship, during the past few months has given addresses before the Massachusetts Superintendents' Association in Boston, the Connecticut State Teachers' Association, the State Teachers' Association of New York, the State Teachers' Association of Southern Vermont at Brattleboro, and the Teachers' Institute at Oil City, Pennsylvania.

HOUSEHOLD ARTS EDUCATION

Professor Anna M. Cooley visited Baltimore April 2 to 5, and spoke before the teachers of home economics in that city at that time. Miss Cooley and seven of the graduate students made a survey of home economics in Baltimore three years ago. The recommendations suggested at that time have been largely carried out.

On March 21, Professor Cooley spoke at the dinner held at the Madison Square Hotel by the Vocational Club of New York City. The other speakers were Dr. Howe, of Pratt Institute, Miss Meriel Willard, of the Washington Irving High School, and Miss Treva Kauffman, of the State Department of Education, Albany.

Professor Cooley spoke on April 21 in Washington at the meeting of the Supervisors of Home Economics, called by the Bureau of Education.

Professor Wilhelmina Spohr is in France and has been visiting some of the professional schools for girls. She will leave shortly for England.

KINDERGARTEN-FIRST GRADE EDUCATION

On Wednesday, March 5, Dr. Charles McFie Campbell, of the Boston Psychopathic Hospital, spoke to the members of the Kindergarten-First Grade Club and their guests. Dr. Campbell told something of the work of his clinic, and discussed the relation of the teacher to the child who is emotionally unstable.

Dr. Bess V. Cunningham will attend the meeting of the I.K.U. in Minneapolis. She will speak at the supervisors' meeting on "Standards to Be Considered in Judging Kindergarten and First Grade Records," and at the classroom teachers' meeting on "The Use of Objective Measurements in Kindergarten and First Grade."

The members of Professor Hill's class in Critical Study of Curricula and Experiments in the Education of Young Children, Education 436, have recently been addressed by Dr. Helen T. Wooley, psychologist of the Merrill-Palmer School in Detroit, and Miss Edna White, director of the school. Dr. Wooley told of the work being done with children in the nursery school; Miss White discussed the problem of nutrition and the physical care of the children.

INSTITUTION MANAGEMENT

Dr. Kate Daum, recently appointed head dietitian at the Presbyterian Hospital, New York City, spoke to one of the Institution Management groups on March 25, on "The Development of the Hospital Dietary Department." Dr. Daum discussed the type of training and experience necessary for such professional work from the standpoint of the main responsibilities carried by the dietitian in a modern hospital. She stressed the importance of a study of management problems and of adequate preparation in nutrition and in the technique of teaching, in indicating the three divisions of work carried on in the dietary department, work which includes the teaching of student nurses and dietitians in addition to the preparation and serving of normal and of special diets. She also considered some of the problems involved in the development of post-graduate work for the student dietitian, in coöperation with colleges offering courses in dietary administration.

Miss Lydia Southard, a member of the teaching staff and house director of Whittier Hall, is the author of a handbook on *Institutional Household Management*, recently published by the J. B. Lippincott Company. This book, which is the first of a series on the problems of management in the large group household, deals with the house department of college residence halls and similar households. The purchasing and the care of furnishings and supplies receive the major attention but office management and record keeping, personnel problems and systems of control are also considered both from the standpoint of students of Institution Management and of house directors. The book is generously illustrated. As a first contribution to this particular subject, this book should be of interest both to students and to workers in this field.

Professor Katharine A. Fisher has been invited to speak at the annual meeting of the Ontario Educational Association in Toronto on April 23 on "Some of Our Present Opportunities in Household Arts Education."

MATHEMATICS

Professor David Eugene Smith addressed the Mathematics Section of the Philadelphia Teachers Association on Saturday, March 29.

Professor Clifford B. Upton is to speak on May 23 at Hunter College before the New York Section of the Association of Teachers of Mathematics of the Middle States and Maryland on "The Curriculum in Mathematics for the First Year of the High School."

Mr. W. D. Reeve spoke on April 10 before the Mathematics Section of Schoolmen's Week, in Philadelphia, on "The Modern Course of Study in Secondary Mathematics."

NURSING EDUCATION

Professor Mary A. Nutting has returned from Bermuda where the latter part of her convalescence was spent, and she is now taking up her work again in the College.

Professor Lillian A. Hudson sailed for Europe early in February, and is at present enjoying a brief trip through Morocco en route to Sicily and Italy where she expects to spend most of April.

Miss Mary B. Hulsizer addressed the School Nurses of the State of Connecticut at their first annual meeting in New Haven on "The Place of the School Nurse in the Modern School Health Program."

Miss Maude B. Muse recently gave a short course of lectures on Psychology and the Principles of Teaching at the Institute for Teachers and Supervisors held by the New York League of Nursing Education in New York.

One of the recent visitors to the department of nursing education was Dame Maud MacCarthy, matron-in-chief of the British Expeditionary Forces during the war.

PHILOSOPHY OF EDUCATION

Professor William H. Kilpatrick addressed the Connecticut State Teachers Association in New Haven on February 9 and the New Bedford, Massachusetts, Teachers Association on February 12. On February 28 he addressed the Department of Superintendence in Chicago, discussing the question, "How Shall We Select the Subject Matter of the Elementary School Curriculum?"

On March 6 Professor Kilpatrick spoke before the United Parents' Associations of Greater New York. The lecture was the first of a series given under the auspices of the Board of Education with the aim of popularizing the study of educational topics.

PHYSICAL EDUCATION

Professor Jesse F. Williams attended the meeting of the North Carolina State Education Association, at Raleigh, N. C., March 13-14. He also visited the North

Carolina College for Women, at Greensboro, where there is in course of construction a new gymnasium for women, and hockey fields and tennis courts. This plant, when it is completed, will be the best equipped physical education opportunity for college women in the entire South.

On March 27 Professor Williams gave an address before the women students of the University of Illinois. This occasion marked the beginning of a "Health Week" drive initiated by the Women's Athletic Association. The department of physical education for women is under the direction of Miss Louise Freer, a graduate of Teachers College. Miss Harriet Brown, of the class of 1919, is in charge of athletics.

RURAL EDUCATION

Professor Mabel Carney spent a month during the mid-year recess in visiting Negro schools throughout the South under the auspices of the General Education Board. Her itinerary for this trip started in Washington, D. C., and extended south and west through North Carolina, South Carolina, Georgia, Alabama, Tennessee, and Oklahoma. Among the Negro institutions visited were the Smithfield Training School and the Fayetteville Normal School in North Carolina; Penn School on St. Helena Island, South Carolina; Spelman Seminary, Morris Brown College, and Atlanta University in Georgia; the Colored Normal School in Montgomery, Alabama; Southern University and the Morehouse Parish Training School in Louisiana; and the Manassus grade school and Negro consolidated schools of Shelby County, Nashville, Tennessee. A number of white centers were visited en route also, including the State Department of Education in North Carolina, the consolidated rural schools of Montgomery County, Alabama; the State Department of Education in Baton Rouge, Louisiana; the University of Oklahoma at Norman; and Peabody College, Nashville, Tennessee.

The chief purpose of this trip was to secure some first-hand information on the conditions of Negro schools as a background for a three weeks' course on normal training which Professor Carney is to give at Hampton Institute in June.

Education 273-274, the basic course in Rural Sociology and Economics required of all students in rural education, has been supplemented this year by a number of lectures from rural education leaders in the field. Among the speakers who have appeared during the year in this connection are the following: Aaron Sapiro, national attorney for Farmers' Coöperative Associations, New York City; John H. Kolb, professor of rural sociology, University of Wisconsin; E. C. Lindeman, social research worker, New York City; H. N. Morse, survey specialist, Presbyterian Board of Home Missions, New York City; Edmund deS. Brunner, chairman, Institute of Social and Religious Research, New York City; E. C. Branson, professor of rural sociology, University of North Carolina; C. J. Galpin, farm life specialist, Department of Agriculture, Washington, D. C.; Henry Israel, executive secretary, American Country Life Association, New York City; Warren H. Wilson, of the Presbyterian Board of Home Missions, New York City; Carl C. Taylor, professor of rural sociology, State College of Agriculture, West Raleigh, N. C.; Nat T. Frame, College of Agriculture, Morgantown, W. Va.; and J. L. Hypes, of the College of Agriculture, Storrs, Conn.

This series of lectures has proved a source of great enrichment to the rural work this year and has been very popular with students.

SECONDARY EDUCATION

The final meeting for the academic year of the Secondary Group was led by Mr. Jacob S. Orleans on the question, "What Studies Are of Most Worth?" A report was made of the

investigation by the Institute of Educational Research, under the direction of Professor E. L. Thorndike, of the effect of study of the several subjects on intelligence scores.

Professor Thomas H. Briggs is serving as consulting director for the commission appointed by the State Teachers Association of Missouri for the development of curricula and courses of study for secondary schools. The work is expected to extend over two years. Professor Briggs spent a week in April in Denver advising there with the committees that are revising the secondary school courses of study.

On February 26 Professor Briggs addressed the Education Commission of Chicago on the proposed adoption of junior high schools in that city.

To the staff in secondary education have been added for next year Mr. Herbert B. Bruner, formerly superintendent of schools at Okmulgee, Oklahoma, as associate in education, and Miss Maxie N. Woodring, formerly head of the training school of the Oklahoma College for Women, as instructor in education. Mr. Bruner will be associated with the research work and will develop courses articulating the work of the elementary and junior high schools in reorganized systems. Miss Woodring will offer for teachers of experience a course translating the modern theories of philosophy and psychology into classroom practice.

The members of the course in Field Studies in the Organization and Administration of Extra-Curricular Studies in Senior and Junior High Schools have made detailed studies of the extra-curricular activities of the following high schools in New York City: Washington Irving, DeWitt Clinton, Julia Richman, Wadleigh, Morris, Lincoln School of Teachers College, Horace Mann School for Boys, Horace Mann School for Girls, and of the high schools at Leonia and Hackensack, New Jersey.

A staff of twenty-eight specialists brought together by Professor Elbert K. Fretwell from the College and from the various national organizations interested in camping are conducting the Fifth Camp Leadership Course. Many of the 170 members of the course, together with many camp directors distributed from Michigan to Florida, spent the week of April 28 in camp at Bear Mountain in the Palisades Interstate Park.

Mr. C. F. Smith is directing the Scoutmasters School for Greater New York with 240 scoutmasters and prospective scoutmasters in attendance.

Professor Fretwell spent the week of March 24 in Chicago under the direction of Mr. C. E. DeButts, assistant superintendent of schools in charge of high schools, speaking to the student bodies in seventeen Chicago high schools and holding conferences with the faculty advisers of school activities, with the deans of girls, and with the leaders of student organizations concerned with the development of the schools' extra-curricular activities.

Two recent publications have grown out of term reports in courses given in the College by Professor Franklin W. Johnson, one an article in the January number of the *School Review* on "The Concentration Study Hall," by Miss Ethel M. Parmenter, of the East Technical High School, Cleveland; the other a textbook, *American Democracy*, by John T. Greenan, of the East Orange High School, and recently published by Houghton Mifflin Company.

A checking list for the supervision of instruction in high school classes, prepared by Professor Johnson, has been published by the Bureau of Publications, Teachers College. This is not a score card for rating teachers. It is intended rather to provide an analysis of the most important factors of good class room teaching. This checking list was developed in a class of experienced teachers who gave it an extended tryout in the Horace Mann school and several public high schools before it reached its present form. Its orderly arrangement with the accompanying standards, clearly expressed, makes this a very use-

ful instrument for principals or supervisors in the improvement of teachers in service.

On the way to and from the Chicago meeting of the Department of Superintendence of the N. E. A., Professor Sarah M. Sturtevant visited a number of schools and colleges in the interest of the preparation of women as advisers of women and girls in high schools and colleges. Detroit Teachers College, Cass Technical High School, Hutchins Intermediate School, Michigan State Normal College at Ypsilanti, Northwestern University, Milwaukee-Downer, and Milwaukee Teachers College opened their doors most hospitably to a representative of Teachers College. In Detroit a group of teachers and advisers met about the dinner table for conference on the educational guidance of girls.

Professor Sturtevant gave an address before the teacher-training section of the Deans' Conference at Chicago on "The Qualifications and Preparation of Deans of Women," which appears in this number of THE RECORD.

On Tuesday evening, March 11, the Advisers Club entertained the deans and teachers who are doing dean's work in and about New York. Miss McVey, president of the organization, Miss Johnson, of Washington Irving High School, and Miss Knox, of Morris High School, spoke on various phases of their work.

On Thursday, April 3, members of the class for advisers of women and girls spent a profitable day visiting the High School at Bridgeport, Conn. Miss Margaret Kiely, dean of girls, has an interesting social program in full swing. The visitors were fortunate in seeing the climax of student projects in dramatics, athletics, and in vocational guidance.

A SERVICE BUREAU FOR CLASSICAL TEACHERS

A REPORT OF PROGRESS

A statement of the aims of the Service Bureau for Classical Teachers which is in operation at Teachers College under the joint auspices of the College and the American Classical League, has already appeared in these columns. They may be re-stated briefly as follows: First, collecting and arranging in a form suitable for purposes of inspection and study, such material as may prove of value to classical teachers and other persons interested in the classics in the secondary schools; second, distributing certain parts of this material; third, conducting a correspondence department for an exchange of ideas in general with teachers, principals, and persons who are interested in the cause of the classics.

The underlying policy is that which the word "clearing house" ordinarily connotes, namely a convenient center for the collection of material and its dissemination among persons who are interested in receiving it. Practically no material is sent out except upon request.

Inasmuch as the enterprise was a new one and the initial amount of work so considerable, it became necessary very early in the year to decide upon certain lines of procedure which on the whole seemed to be of fundamental importance, and to put off until later everything else even though it might be highly desirable. The immediate ends decided upon were these:

1. To make the establishment of the Bureau known to the classical teachers of the country and other persons whose coöperation was especially desirable.

2. To interest actively a sufficiently large number of professionally-minded teachers to make it possible to secure from them material for the files, particularly along constructive lines, and to keep this matter in such a form in the Service Bureau that it might be available for examination and study.

3. To publish eight times a year a bulletin known as *Latin Notes* which should carry official announcements as to ways and means of making use of the Service Bureau, short articles bearing upon the teaching of Latin, suggestions for such constructive work as the organization of content to meet specific

ends, items of professional news, and details of equipment.

4. To answer requests for information or assistance of various kinds.

5. To prepare material from time to time as opportunity afforded, in either mimeographed or printed form, which could be lent upon payment of postage or purchased for a minimum price.

6. To develop the idea of sending out upon request collections of material in the form of "Latin Package Libraries," particularly to discover whether these could be circulated through the extension divisions of state universities or through any other existing agencies.

7. To discover to what degree the Bureau might count upon financial support from teachers in starting out upon a plan for publishing certain worthwhile material in the form of bulletins which could be sold at cost.

The reader will perhaps be interested in knowing to what extent the objectives stated above have been attained. The following summary sets forth certain significant facts regarding the degree of accomplishment in connection with each of the above points.

1. Through efforts of classical associations, interested individuals, announcements in non-classical publications and in the *Classical Journal*, which has given generously of its space, the plan of the Bureau is now widely known.

2. Teachers are sending in material and suggestions from time to time with increasing frequency. An outline of contents of the Service Bureau files, dated January 15, lists about 1000 items. Since many of the topics appear as "Collections of Material," "Comments from Teachers," etc., this index cannot convey more than a general idea of the amount of material on hand. This is kept in filing cases where it may be examined by any visitor at any time. The classification includes such headings as these: Objectives, Content, Courses of Study, Teaching Latin in General, Prose Composition, Translation, Vocabulary, Forms, Syntax, First-year Problems, Caesar, Cicero, Vergil, Rome and the Romans, Equipment, Classical Clubs, Training Courses for Teachers, Tests and Measurements, the Classical Survey, the Value of the Classics, Education in General, College Entrance Requirements, Professional Activities in Various States.

Several persons are working on lists of certain high points commonly associated with the study of Latin in high schools but often not emphasized sufficiently to make a proper impression on any considerable number of pupils. For example, Miss Margaret Henry, of the Franklin G. Lane High School, New York City, has made a careful analysis of what Cicero has to offer on the subject of high ideals of citizenship in two orations commonly read in high schools. As an illustration of state-wide coöperation, Ohio should be mentioned. Teachers in various parts of this state are working out certain projects for their own use but with the idea also that the results may be made useful to teachers in general.

Visitors to the Bureau are becoming more and more frequent and as time goes on the possibilities in this connection for coming into personal touch with teachers are sure to increase.

3. The four-page bulletin called *Latin Notes* now has a subscription list of 1000.

4. The Bureau receives from 500 to 650 letters per month, many of them containing at least five requests for assistance in different ways. Some require a very considerable amount of research in order to approximate a satisfactory answer and all of them necessitate thought. Certain ones which the director cannot answer without undue trouble, are turned over to an informal committee of "coöperators," persons who by reason of experience or training are able to furnish the information desired.

It will be obvious to the thoughtful reader that even though the limits of space permitted a tabulation of the contents of these letters, no such list could in any sense be an adequate index of the service to the cause of Latin teach-

ing which such a correspondence makes possible.

5. Fifty pieces of material useful to teachers in various ways have been put in mimeographed form and listed in the various issues of *Latin Notes* under the head of "Outlines Ready for Distribution." At least 2,485 of these have been sent out since December 15 in answer to requests. In order to afford some idea of the character of this material, a few titles are quoted:

A summary of points to be remembered in regard to the government of Rome in the time of Cicero.
Valuable publications for the construction of a one-year English-Latin course.
Suggestions for a classical program.
A private initiative library for the Latin teacher's room.
A convenient list of Latin prefixes.
What the high school pupil should know about the Romans.
Some reasons for my low mark in Latin —points for pupils to consider.
The real basis for interest in Latin.
Teaching Latin grammar as an aid to English grammar and expression—concrete suggestions for the teacher's procedure.
Characteristic virtues of the older Romans—summaries in the form of brief paragraphs from the stories in *Plutarch's Lives.*
An account of the Classical Survey to April, 1923.
The Value of the Classics in Training for Citizenship.
A list of English words which contain pictures of Roman life.
Some suggestions for varying the work in the Caesar class in order to avoid monotony.
How to attack the translation of a Latin sentence—a hint to the pupil.

6. The number of Package Libraries is not yet large enough to serve the needs of the Bureau, only 400 being available at present. However, their numbers will be greatly increased before the end of the school year. The demand for these has been constant since they were first announced and no less than 185 have been sent out up to March 24. The plan of circulating them through extension divisions of universities is now being tried in six states and there is no reason to think that such agencies for distribution cannot be employed next year to a much larger extent.

7. Replies to a query as to whether or not teachers would be interested enough in printed bulletins covering important topics in connection with the teaching of secondary Latin to purchase them at 25 cents each, have been so favorable that there is no doubt as to the feasibility from a financial point of view of publishing such material at the beginning of next year.

In conclusion it may be said that the first six months have proved beyond a doubt that there is a pressing need for such a professional center in connection with the teaching of Latin in the secondary schools as the Service Bureau for Classical Teachers aims to provide. Its success, moreover, may perhaps point the way to the organization of similar movements in the case of certain other high school subjects. For no one who has made a careful study of the situation doubts for a moment that the need for devising some such machinery for rendering timely and practical aid to teachers is quite as imperative in the case of other departments, notably English, science, and history, as it is in the department of Latin.

ALUMNI ACTIVITIES

THE TEACHERS COLLEGE ALUMNI ASSOCIATION

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ALUMNI CONFERENCES AND REUNION

COUNCIL DINNER

The Alumni Council, consisting of the executive committee of the Alumni Association and representatives from the local Teachers College clubs, met at dinner on Thursday, April 24, at the Men's Faculty Club. The question of the future of the Alumni Association was discussed. Dean Russell, Dr. Reynolds, and Miss Gunther met with the Council.

GENERAL ALUMNI CONFERENCE

The general meeting was held on April 25 in the Horace Mann Auditorium. Dr. George H. Reavis, president of the Alumni Association, presided. Dr. Fannie W. Dunn gave a report of the work of the Alumni Association during the past year and made announcements of general interest. The retiring Alumni Trustee, Dr. A. B. Meredith, commissioner of education for the State of Connecticut, reported on his investigation of the cost of publication of doctors' dissertations and made rec-

ommendations for consideration by the Committee on Higher Degrees. Dr. R. G. Reynolds, field secretary of the Alumni Association, and director of the Bureau of Educational Service, talked on the subject of Teachers College local clubs and their part in the Association. He read a financial report and told of the reorganization of the Association.

At the close of the business meeting three addresses were given: "The Financing of Public Education," by Dr. George D. Strayer; "Professionalism in Education," by Dr. William C. Bagley, and "Education and Internationalism," by Dr. William F. Russell.

Dean's Reception

After the Conference, the Teachers College staff, alumni, students and their friends were received by Dean and Mrs. Russell in the Thompson gymnasium. Dean Russell was reminded again of the hearty support of the great body of graduates and students who have seen the progress made by Teachers College under his vision and guidance. It was a year ago that the Alumni and students celebrated with Dean Russell his twenty-fifth anniversary as dean of Teachers College.

Alumni Get-Together

All sectional conferences were dismissed promptly at twelve o'clock on Saturday, April 26, and the Alumni and students gathered in the fifth floor reading room of the Library. Twenty minutes were devoted to singing Teachers College songs. Opportunity for looking over the beautiful new library building, Russell Hall, was offered after the meeting.

Section Meetings

On Friday morning, and on Saturday morning and afternoon the various departments held their Conferences. An interesting feature this year was the joint meeting of the Elementary Education and Secondary Education groups, and of the Rural, Normal School, and Public Health Nursing groups. On Saturday, luncheons were served to the following groups: Advisers, Normal Education and Rural Education joining with the Elementary Education group, Fine Arts, Household Arts, Lower Primary Education, Physical Education, and Religious Education.

Several of the graduate classes in the School of Practical Arts held their luncheons on Saturday. The class of 1916 is endeavoring to unite all ten classes in the School and to formulate plans for a general reunion to be held at Alumni time in the future. This year's gathering, to which the ten class presidents were invited, was the beginning. The foods and cookery department served the luncheon in its own exquisite style. Professor Van Arsdale and Dr. Reynolds were the guests of honor.

Elections for Executive Committee Officers

Dr. Fannie W. Dunn, professor of education, Teachers College, and Miss Agnes Burke, instructor in kindergarten-first grade education, Teachers College, have been re-elected first vice-president and recording secretary respectively for a term of two years, beginning March 1, 1924. Dr. Edwin C. Broome, superintendent of schools, Philadelphia, was elected Alumni Trustee.

ALUMNI NOTES FROM FOREIGN LANDS

China

Among the recent appointments in the Orient are the following:

Professor L. C. Cha, dean of the Peking Teachers College for Men.

Dr. P. C. Chang, dean of Tsing Hua College, at Peking.

Dr. Jennings P. Chu, assistant dean of the School of Education at the Southeastern Nanking University and director of the Summer Session.

Dr. Ang. Lu has resigned as professor

of elementary education at the Southeastern University, Nanking, and is on her way to America.

Professor C. Y. Chang, formerly of Peking Teachers College for Men, is now president of Pa Ting Fu Second Normal School.

Dr. T. T. Lew, formerly professor in Yenching University, has been made dean of the College of Theology, Yenching University.

Miss Sue Wang, who recently received her Ph.D. at Northwestern, will return to Peking where she will be professor of education at the Women's College of Yenching University.

Dr. W. T. Tao recently resigned as dean of the College of Education at Southeastern University, Nanking, in order to become executive director of Chinese National Association for the Advancement of Education and Association for Elimination of Chinese Illiteracy.

Dr. Herman C. Lui is educational director of the Y. M. C. A. National Committee. He has organized and with Dr. Yen has formed classes at Chefoo and Ningpo, where the enrollment is over one thousand in each class. This work is in connection with the new movement for mass education in China, the aim being to teach everyone in China to read and write within the next generation.

Dr. H. C. Chow has gone to Amoy University as professor of education.

Dr. S. C. Liao has been made professor of education and head of the Model High School at the Southeastern University.

Dr. H. C. Chen has been made professor of education at Southeastern University.

Professor E. L. Terman, of Yenching University, has become educational director of the National Survey of the Chinese National Association for Advancement of Education as successor to Dr. William A. McCall, of Teachers College.

Miss Wan Chuck and Miss Susan Yipsang are teaching in the Provincial Normal School, Canton, Kwantung Province, China.

Miss Alice Gregg, who is supervisor of education in the province of Anwhei, China, attended the recent Educational Conference in Shanghai and reports a large attendance of former students of Teachers College among whom were the following: Dr. Herman Lui, of Y. M. C. A., Shanghai; Professor King Chu, of the Commercial Press, Shanghai; Miss Kate B. Hackney, principal of the Martha Heywood School for Girls, Soochou; Dr. Wallace, of Far Szchechnau; Miss Dora Zimmerman, of Ningpo; and Miss Peterson, principal of the Union School for Girls, Hanchow.

Japan

Dr. Tomi Wada, who is engaged in experimental research at the Imperial University, Fukwoka, Japan, is the first woman to be appointed to the Imperial University staff.

Korea

N. P. Paik has been made professor of education at the Chosen Christian College, Seoul, Korea.

South Africa

Mr. Wouter de v. Malan has accepted a position as instructor in a training college at Graff Reinet, South Africa.

Mr. J. R. Malan has been appointed principal of the public school at Williston, Cape Providence, South Africa, with an opportunity for working out rural problems.

India

Mr. Mason Olcott, after spending four months at Vellore, is now attending the Language School at Creston, Kodaikanal, S. India. He reports meeting the following former Teachers College students: Miss Alice Van Doren, Women's Christian College, Madras; Miss Charlotte Wycoff, Madras; Miss Ruth Scudder, Chittoor, S. India; Miss Grace Vining, who is also at the Language School,

Creston, Kodaikanal; Dr. J. H. Warnshino and Rev. J. De Boer at Vellore.

TEACHERS COLLEGE CLUBS

Akron, Ohio, Club

The Teachers College Club of Akron, Ohio, held their first annual banquet at the University Club, Friday, February 29. One hundred and ten members and friends were present. Dr. N. L. Engelhardt gave an enthusiastic and entertaining talk on Teachers College and its work in the educational world. His talk was illustrated by pictures of the new library building and of the faculty. The guests of honor were the principals of the five high schools and their wives.

Bangor Club

The annual meeting of the Bangor Teachers College Club was held on February 4. The following officers were elected: President, Miss Augusta P. Kirstein; secretary-treasurer, Miss Nellie I. Gale.

Los Angeles Club

Dr. William C. Bagley was guest of honor at a breakfast given in January by the Los Angeles Teachers College Club at the time of the meeting of the California Teachers' Association, Southern Section.

Minnesota Club

Miss Theda Gildemeister, of Winona State Teachers College, was elected president of the Minnesota Teachers College Club at its eleventh anniversary meeting, November 2, in St. Paul. Other officers of the club are Miss Sarah Wilkinson, vice-president, and Miss Gertrude Drohan, of Minneapolis, secretary-treasurer.

Sixty-six members and friends of the club met at luncheon at the St. Paul Athletic Club. Mr. M. L. Jacobson, of St. Paul, past-president, presided. The guest of honor from Teachers College was Miss Mabel Carney, who spoke most entertainingly. She extended greetings to the club from Dr. R. G. Reynolds, field secretary, and guest of honor a year ago. The intimate and pleasing account which Miss Carney gave of Teachers College affairs was of interest to all. Dr. Charles Judd, of the University of Chicago, was a guest of honor also and a speaker whom the club greatly enjoyed.

At the business meeting following the luncheon Dr. F. H. Swift, of the University of Minnesota, proposed the following resolution which was unanimously endorsed by the club: Resolved: That the Minnesota Teachers College Club do respectfully petition the administrative authorities of Teachers College to consider the feasibility of offering two summer sessions of six weeks each, and of so scheduling the same that they shall coincide as nearly as possible with the summer terms of other institutions of higher learning.

Oklahoma Club

The annual banquet of the Oklahoma Teachers College Club was held Friday evening, February 8, in the ballroom of the Skirvin Hotel at Oklahoma City. Although many other clubs in which the alumni hold membership met at the same time, the meeting was large and enthusiastic.

Miss Bessie M. Huff, head of the English department of the Muskogee High School, gave an interesting report of the "High Lights of the Summer Session of 1923" and Mr. Frank Pauley, of Sand Springs, a similar report on "High Lights of the Men's Dinner of 1923." Dr. Allen M. Ruggles, of the University of Oklahoma, spoke inspiringly on "The Functions of a State Teachers College Club" while Dr. Wm. T. Bawden, assistant superintendent of the city schools of Tulsa and director of vocational and part-time education, gave a characteristically interesting address, entitled "Don't Park Here." Of special interest to the alumni was Miss Mabel Carney's talk on "Recent News

of the Faculty and Policies of Teachers College." Those present could almost see the progress made within the last year or two in physical equipment and spiritual insight. Although Miss Carney had made seven addresses that day, she was the embodiment of the spirit of Teachers College and carried her hearers to renewed enthusiasm for the ideals and aspirations of their Alma Mater.

The officers reëlected for the ensuing year were:

President, Mr. J. R. Barton, superintendent of city schools of Sapulpa; secretary and treasurer, Miss Nora Talbot, dean of the School of Household Economics, Agricultural and Mechanical College, Stillwater.

MEETING OF TEACHERS COLLEGE GROUPS IN THE MIDDLE WEST

In March, Professor Emma Gunther, of the Teachers College faculty, met with several groups of former Teachers College students in Indiana and Iowa. She included in her trip a visit to the University of Iowa, Iowa City, where she was the guest of Dean Kay at the College of Liberal Arts. Miss Gunther also visited Coe College at Cedar Rapids.

South Bend, Indiana

The South Bend Teachers College Club entertained at dinner, March 11, for Professor Gunther with twenty-five Alumni present. Mr. A. B. Williamson, president of the club, introduced the speaker. The dinner meeting was held in the new John F. Miner Junior High School, recently completed. A tour of the building was made after the meeting. This beautiful new high school embodies all of the latest improvements for such an educational plant, and is one of several new schools in the building program being promoted by Supt. W. W. Borden.

Ames, Iowa

A group of Teachers College alumni met at Ames Agricultural College, Ames, Iowa, during a visit by Professor Gunther. This was the first time such a group met to organize, and the meeting was put into the hands of Mr. J. M. Thurber, of the English department, who started the evening by an analysis of the so-called "true Teachers College spirit." Another talk of the evening was by Miss Anna Richardson, dean of home economics, who has on her staff over sixty teachers, with an enrollment in household arts of over one thousand students.

Cedar Falls, Iowa

At Cedar Falls State Normal College, which has an enrollment of over 4,000 students, a group of Teachers College alumni met in the practice apartment and a special dinner was served by the students. Previous to this meeting Miss Gunther gave a talk on "Some Impressions of the Orient Regarding the Training of Women for Homemaking" to the College Club composed of about sixty women members of the faculty. She also gave a talk to the student body of 1,600 freshmen at Chapel.

Mount Vernon, Iowa

At Cornell College, Mount Vernon, Iowa, a luncheon was given in honor of Miss Gunther by a group of Teachers College alumni under the direction of Miss Myrtle Johnston, and included the senior students in Household Arts.

STUDENT ORGANIZATIONS

The work of Student and Alumni Organizations is now combined in an office located in Room 117, Russell Hall, Teachers College. The purpose of such an arrangement is to build up a unified program for all student and alumni activities.

The students at the College this year have been very fortunate in having heard speakers of such prominence as

Sherwood Eddy, Jane Addams, Dr. C. H. Levermore, and Dr. E. C. Branson.

The Graduate Club trips have enabled students to visit the important points in New York and vicinity. When the Pacific fleet was in the Hudson, Admiral Cuntz invited the Graduate Club to go aboard as his guests. Members of the faculty have been guests of honor at the Sunday night suppers, which have been increasingly well attended. A new feature of the Club's activities this year has been the inauguration of "fun nights." These parties have been held in Thompson Gymnasium, and have drawn crowds of from three hundred and fifty to four hundred graduate students. The Tuesday afternoon teas have continued to call students and faculty to three-quarters of an hour of social greeting and relaxation.

The Students' Executive Council has been working on a revision of the Constitution and will have it in the hands of the students for acceptance or suggested changes in the near future. Many alterations have been made to meet the needs of the student body caused by the elimination of the Freshman and the Sophomore classes.

With the assistance of the executive secretary of student organizations, Miss Edith E. Swan, the Council has been active in uniting all student activities and preparing the way for greater cooperation with the student organizations of the future. The professional and departmental clubs have been increasingly active with professional and social programs at their monthly meetings. The departmental clubs have developed an understanding of their mutual fields by holding joint meetings. On such occasions as the mid-year reception to new students, held in Russell Hall, and the conducting of the Student Friendship and the Canton Christian College Drives, they have accomplished their goals by their united efforts.

The new officers on the Council for 1924-1925 are:

President: Lloyd B. Sharp, Kansas, succeeding Helen J. Piper, Maine. Vice-President: Marjorie T. Smith, New York, succeeding Elizabeth Talbot, Maryland. Recording Secretary: Harlan G. Metcalf, Ohio, succeeding Amanda Hebeler, Michigan. Members at Large: Bertha Pullen, Michigan; Dorothy Wright, New Jersey; Gordon Singleton, Georgia, succeeding Lorene Killey, California; Yvonne Fassler, New York, and Leo De Long, Indiana, respectively.

The Weekly Bulletin has become a six-page paper. This is evidence of increased interest in the activities of student organizations and general student news. Each week a picture of a faculty member is published. Many of the students have saved *The Bulletin* as a record of their year's stay at Teachers College, and have expressed a desire to become subscribers to the paper next year.

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Schools in Bulgaria: With Special Reference to the Influence of the Agrarian Party on Elementary and Secondary Education. By WILLIAM F. RUSSELL, Ph. D. Studies of the International Institute of Teachers College, No. 1. 114 pp. Cloth, $1.50.

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